# The Builder.

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### *The Musée Carnavalet, Paris.*

IN the middle of the Quartier du Marais, near the Place des Vosges, so picturesque with its red brick houses, there rises, No. 23, Rue Sévigné, a house as silent as a convent, whose melancholy walls still present, under the dull patine which Time has impressed on the stone, decorative details of great purity of style. At the angle of the building a slab of white marble bears the following inscription :—

"Marie de Rabu'in-Chantal,
Marquise de Sévigné,
habita cet hôtel
de 1674 à 1696."

These simple words suffice to transform the aspect of the edifice: they awaken a crowd of associations with the history of a great and brilliant epoch. It was, in fact, in this house that Madame de Sévigné spent the closing years of her life. "Nous voilà arrêtés à Carnavalet," she wrote to her daughter; "le ciel soit loué, nous ne pouvions mieux faire."

She could, in fact, hardly at that time have found a better abode than that hotel of which Pierre Lescot had given the plan to Bullant, and which Jean Goujon decorated with some of his best sculptures. A decorator, one Maître Pouce, whose name history has transmitted to us, had executed the carving on the façades, and the first proprietor of the house, Jacques de Ligueris, had engaged, for the interior decoration, the same Italian painters who had come to Fontainebleau with Rosso.

The Hôtel Carnavalet is one of the numerous specimens of Renaissance architecture the elegant lines and delicate ornament of which succeeding generations seem to have found pleasure in cutting up and spoiling. In this case it is not the present generation, at all events, which is to blame for such depredations, and the municipal administration of Paris has shown an enlightened and discreet spirit in dealing with the necessary enlargement of any of the old buildings in which historic collections are preserved. The blame in this instance must be credited back to a certain Claude Boislevè, a rich financier, whose fortune was shipwrecked in the great disaster in which the *Surintendant* Fouquet was concerned. The valuable documents recently discovered by the learned Librarian of the City of Paris, M. Jules Cousin, enable us to recover the chronological succession of the proprietors of Carnavalet,—of which Madame de Sévigné was only a tenant,—and to ascertain that it was Boislevè, with the tasteless ways of a *nouveau riche*, who ordained the clumsy restoration of the work of Pierre Lescot. The sole excuse for him is that he did employ François Mansard, who employed as assistant a heavy-headed Flemish artist, one Van Obstal, whose evil deeds have lived after him. This is the cause why, while the ancient façade of the Hôtel is remarkable for its grace of composition and detail, the wings afterwards built present only heavy masses of building devoid of character. Fortunately, while enlarging the building, which he beautified with the inevitable "Mansard" roofs, the architect employed by M. Boislevè respected the old sixteenth century gateway of Du Cerceau, ornamented by Jean Goujon with some remarkable bas-reliefs, which time has dealt gently with.

Above the entrance is a figure of "Abundance" standing on a mask such as are used in carnival time (a reference to the title, "Carnavalet"). In the tympanum, two genii bearing palms form supporters to an escutcheon which formerly bore the Ligueris arms. In panels on each side two lions *passant* are sculptured on a ground of military symbols. One of them, which holds his paw on a globe, is well known as the "lion à l'écu," and is regarded as a kind of model of decorative sculpture of this class.

The elevation we give, reproduced from an old engraving (see next page), shows the general design and proportion of the principal façade; the other exterior façade, which looks towards the Rue Francs-Bourgeois, offers but little of interest, in spite of the bas-relief with which Van Obstal has decorated it, and which symbolises, with mythological extravagance and in very bad taste, the marriage of Louis XIV.

The principal entrance leads, by a passage with a vaulted ceiling, to the *cour d'honneur*, a rectangular space whose four faces present each a different decoration. The one next to the Rue Sévigné reproduces very nearly the exterior design. It is ornamented with two large seated figures of Fame, holding palms, and grouped with a keystone figure in relief which stands for Authority. There is a frieze ornamented with delicately-carved foliage. Above the roof there was a figure of Flora, which was so dilapidated as to threaten a fall, and which is now in a corner of the courtyard awaiting indispensable repair or "restoration."

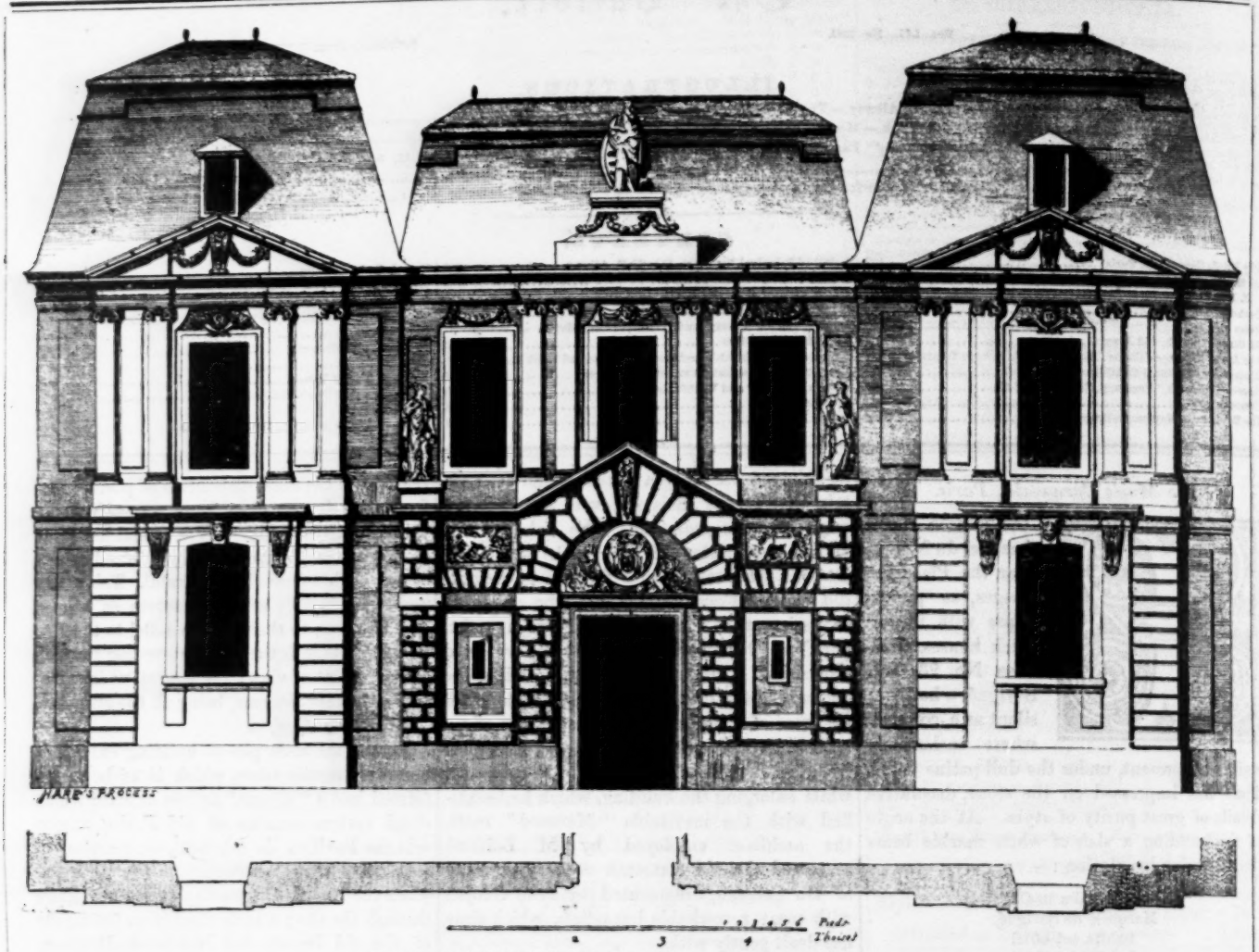
The façade on the left, crowned by a balustrade, is divided into six bays. On the first-floor level are four figures in bas-relief, symbolising the elements. In the sixth bay, two genii, holding torches, are reclined on the cornice of the doorway. The opposite façade reproduces the same disposition of parts. The figures on the first-floor level personify Juno, Hebe, Diana, and Flora. Van Obstal has made clumsy affairs of these subjects, which, above all others, ought to have been graceful. This heavy and commonplace sculpture serves as a good foil, however, to the façade parallel to the Rue Sévigné, which is the most interesting from an artistic point of view; the figures, which symbolise the four Seasons, being all the authentic work of Jean Goujon.

Behind the main pile of building extends a large rectangular space, which is to be transformed into a "square," and on or amid which stand various remains of old Paris; on one side the Pavillon de Choiseul,—a remnant of an hôtel of the seventeenth century, destroyed when the Rue de Quatre Septembre was made through the site; a little further on the façade of the old Bureau des Marchands-Drapiers, formerly situated in the Rue des Déchargeurs, and which has been very successfully rebuilt here under the care of M. Roguet, after the drawings of Jacques Bruant, "Architecte des Bâtiments du Roi," who died in 1664. We give an illustration in this number of the upper portion of the building, showing the modern sculpture of M. Gautier, and the carved decoration by M. Villeminot.*

Opposite the Pavillon de Choiseul has been erected, under the superintendence of M. Bonvard, a gallery of communication in which is to be framed one of the most curious remains of the "ile de la cité," the arch of Nazareth, constructed under Henri II., to form a communication between the Galerie des Archives and the Chambre des Comptes. Greatly injured by the fires of the Commune, and pulled down some years ago to make room for the new Cour d'Assizes, this small monument is now preserved under a shed until the approaching completion of the Musée Carnavalet. The sculpture on it is excellent, especially four figures with palms, of which Jean Goujon need not have been ashamed.

If we now enter the Hôtel, we find, on turning to the right of the vaulted passage out of the Rue de Sévigné, several rooms devoted to the exhibition of pre-historic implements of the Flint Age. The greater part of the specimens came from Levallois, Perret, and Meudon. In another room, devoted to the Gallo-Roman epoch, we may see some of the stones of the first enclosure wall of the ancient Lutetia, found in the sandy deposits on the left bank of the Seine. Some are pierced for poles; others exhibit rudely-cut letters or figures. The succession of rooms in the direction at right angles to the Rue de Sévigné contain a great number of objects of the Roman and

* See phototype illustration in the present number.



*Façade of the Hotel Carnavalet.—From an old engraving.*

Merovingian epochs; a double staircase, situated in the last chamber in this quarter, leads to a gallery containing various fragments of the Christian basilica which preceded Notre Dame, and to another containing a collection of sarcophagi of the fourth and fifth centuries. In an angle of the basement we find disposed, with a certain kind of scenic effect not quite in good taste, a number of casts of skeletons discovered in 1870 in the "Arènes de Lutèce."

We come now to a room which still shows remains of its original decoration. The beams of the ceiling bear the monogram of Carnavalet with the S interwoven with it, which, in the symbolic language of that day signified "grandesse," "tendresse," and "fermesse" (*fidélité*). This room contains a fine chimney-piece ornamented with caryatides, baskets of flowers, and palms, the cornice decorated with an escutcheon bearing the arms of Carnavalet.

In the next room, the interest is centred in a curious collection of potteries, vases, bronzes, and other objects found in the Gallo-Roman Cemetery of Rue Nicole. Among these there is to be seen, under a glass case, a perfect impression or cast of the figure of a child, which was found in the cement lining of a sarcophagus discovered in 1872. This little inhabitant of Lutetia, dead about 1800 years ago, seems as if sleeping, with all the details of its small features preserved, by a fortuitous event, intact to our day.

On leaving the ground-floor galleries, a stone staircase gives access to the first floor, where is situated the collection of engravings, and the fine municipal library founded in 1871, thanks to M. Jules Cousin, who, in those bad days, and just after the burning of the Hôtel de Ville, generously presented his own library of books to the city. Rich as the library is to-day, one cannot forget the treasures that were lost sixteen years ago, of which the most precious jewel was the incomparable missal of Juvenal des Ursins, destroyed by the iconoclasts of the Commune.

Following this are the Galleries of the Municipal Museum, among which may be remarked a small room, of which the ceiling is richly decorated with foliage and garlands painted and gilt, and with mythological subjects in cameo. In a neighbouring room a pedestal, in rather bad taste, covered with tricoloured plush, supports a model of the Bastille, made out of stone which formed part of that fortress. Among a number of objects connected with that turbulent epoch may be observed a copy (very rare) of the official announcement of the death of Louis XVI., the sword of Latour d'Auvergne, and a portrait of Marie Antoinette, taken at the Conciergerie. Unfortunately these and other things, to which a serious interest is attached, are nearly lost in a crowd of trifles of little interest, and placed there merely to make a show.

The buildings which surround the Pavillon de Choiseul are specially devoted to the revolutionary museum left by M. Liesville, who had by time and patience amassed a numerous collection of faience, insignia, decorations, jewels, and medals, the great merit of which is that they are authentic, while a great proportion of similar collections elsewhere are mere modern imitations. The Pavillon de Choiseul itself forms a gallery filled with wood carving in the Louis Quinze style, which came from the old Hôtel des Stuarts, Rue St. Hyacinthe Saint Michel. Among other things in this room is a fauteuil which belonged to Voltaire, another which was the property of Béranger, and various other pieces of furniture belonging to these two illustrious Parisians.

The interior of the Pavillon des Drapiers contains, on the first story, a large square chamber adorned with Doric pilasters with gilt flutings. The ceiling, restored some years ago by M. Maillot, was the work of Lebrun. It represents Mercury presenting Hebe to Jupiter. In a vaulted recess a fine terra-cotta bust of Madame de Sévigné, by Chatrousse, is carried on a gilt console.

The decoration of the neighbouring gallery comes from the ancient Hôtel of the famous Marquis de Dangeau, who wrote the history of the Court of Louis XIV. Although the wainscot, with its Corinthian pilasters with fluted and gilt shafts, is in bad taste, and the allegorical ceiling paintings have almost entirely disappeared, the general effect of the room is still fine.

We have unavoidably neglected, from considerations of space, the mention of many things in the museum worth attention, in the course of a description more directed to the buildings themselves than to their present contents. As will be gathered, there are, besides the municipal collection, a certain number of architectural curiosities which are in themselves worth the attention of the visitors and strangers who, on two days of the week (Sunday and Tuesday), can enter the City Museum free; and, apart from the historical side of the matter, the building may well be a subject of much interest to artists, as one of the remnants of that fine period of French Renaissance of which Jean Goujon was the prominent ornament. None of his work is better than that at Carnavalet; none has more of grace and artistic vigour. And the interest of the buildings at present is not confined to the old house of Kernevenoy (the Breton name which has been softened into Carnavalet), but extends to the modern portion, with its restoration or reconstruction of various architectural monuments of old Paris, full of interest, both from the historic and the architectural point of view.

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**Edinburgh Municipal Buildings Competition.**—The names of the authors of the design illustrated in our last should have been given as Messrs. "Morris & Hunter," not "Morris & Hunt."

**Early Church Architecture.**—On the 29th ult., Mr. S. Slingsby Stallwood, of Reading, delivered an interesting lecture at Wokingham on "Early Church Architecture," which is reported in last week's *Reading Mercury*.

## ON THE THEORY OF THE ABANDONMENT OF ANCIENT LIGHTS.

BY GEO. H. POWELL, BARRISTER-AT-LAW.

DURING the course of the last year there has once more been brought before the Court of Appeal an important case,* involving the question of the exact meaning of the legal term "abandonment." The following remarks, which have no pretension of representing a scientific inquiry into the subject, aim merely at working out, if possible, in a simple and practicable form, some definite principle which could be applied to the decision of such cases as that above alluded to.

Now, whenever a prescriptive right to light has been acquired in respect of a certain window, the *position* of which in the original wall is subsequently altered (by the aperture being either raised or lowered), or the *plane* of which is altered by an alteration in the site and plane of the wall, the first material question is, of course, "to what 'quantum' of light was the owner of the window,—the plaintiff, let us say,—originally entitled?"

Now the prescriptive right,—according to the natural interpretation of the statute,†—is a right to all the light which has access to the window in question, *i.e.*, to the "general light of the sky,"‡ so far as "intercepted," to use the common expression, by the window. It is usual § to speak of this as a "*cone*" of light,—by which expression is meant presumably the whole volume of light ‖ poured (so to speak) through the aperture of the window from all quarters of the area of sky visible from any part of such aperture. What amount of illumination this "cone" would represent in the case of any given window would clearly depend not only on the nature, height, and extent of the obstacles which obscure or tend to obscure it, but upon the exact nature of the aperture, the amount and quality of the glass (where glass is employed), &c.

But for practical purposes (legal and not scientific) we need hardly consider the matter in so much detail. Starting only with the necessary assumption that all parts of the sky are equally luminous, we proceed to consider what pencils of light from any part of the whole area of the sky fall, at any angle, upon the plane¶ of the particular aperture. Whether the aperture be well or ill glazed, or not glazed at all, does not affect this question, so long as some appreciable quantity of light passes through it.

The statute says nothing about glass; and though the use of this material necessarily involves a waste** of a certain quantity of light which would pass through an unglazed aperture, yet it could hardly be maintained that the volume of light which reaches the plane of the aperture (glazed or open) is not in any case "used and enjoyed" in a legal (and practical) sense, so long as the diminution, from any cause, of the light *without* the aperture would always produce a proportionate diminution of the light *within*.

The extent of the intercepted area of sky seems therefore the only material thing to be considered.

For a simple example, let us take the case of a square horizontal skylight, set in the centre of a square courtyard surrounded by four walls of equal height, facing (let us suppose) north, south, east, and west respectively.

The base of the inverted pyramid shown in fig. 1 A will accurately represent* the required area, being bounded on the north by a straight line, $b'\,a'$, parallel to and in the same plane with (1) the south side of the aperture $a\,b\,d\,c$, viz., $a$, $b$, and (2) the line $g\,h$ representing the obscuring horizon on the north side; similarly on the east side by the line $a'\,d'$, which is parallel to and in the same plane with (1) the line $h\,k$ (the obscuring horizon on the east side), and (2) the line $a\,d$, the west side of the aperture $a\,b\,c\,d$. And similarly with the other sides, so that if we imagine the base of the pyramid to be a visible superficies, and further imagine one of the four sides surrounding the square courtyard removed in order to give us a view of it, the rectangular area of sky represented by the said base would appear, when viewed in perspective from below, in the form of the figure $a'$, $b'$, $c'$, $d'$, in fig. 1 A. It can easily be seen that the figure would be exactly pyramidal only when the dimensions of the aperture and surrounding walls were as assumed above.

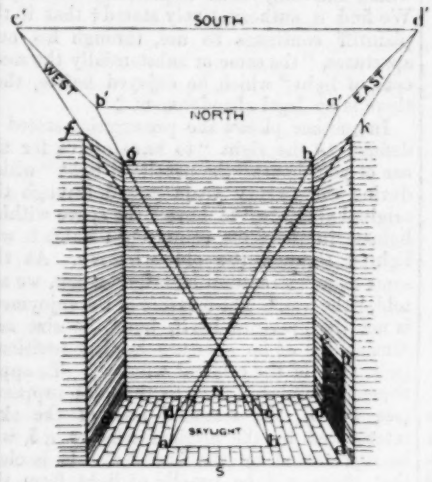


*Fig.* 1 *A.*

But if we wish to consider the whole volume of light reaching the aperture $a\,b\,c\,d$ from any part of the aforesaid area of sky, in so far as it is below the level of the obscuring horizons $f\,g$, $g\,h$, $h\,k$, and $k\,f$, this will be represented not by any part of the pyramid in fig. 1 A, but by the six-sided figure having for opposite sides the squares $a\,b\,c\,d$ and $f\,g\,h\,k$, shown (in perspective) in fig. 1 B, and formed by drawing straight lines from the points $a\,b\,c\,d$ to the points $f\,k\,h\,g$ respectively. It will be seen that the apex of the pyramid in fig. 1 A would fall within this figure, also that supposing the straight lines $a\,f$, $d\,g$, $c\,h$, and $b\,k$, were produced to any distance, the side $f\,g\,h\,k$ would always fall within the base of the pyramid. Thus the upper side of the figure shown in fig. 1 A (were the figure produced to any length) would never represent the area of sky intercepted by the aperture $a\,b\,c\,d$. But, as has been said, fig. 1 A shows this area of sky, represented by the base $(a'\,b'\,c'\,d')$ of the pyramid; whereas fig. 1 B shows the "channel,"† so to speak, through which all direct light must travel, below the level of the obscuring horizon, to reach the aperture $a\,b\,c\,d$. It is important to observe this, merely because the sides of this figure $a\,f\,g\,d$, $d\,g\,h\,c$, $c\,h\,k\,b$, and $b\,k\,f\,a$, represent the planes beyond which the buildings on the west, north-east, and south sides of the aperture respectively cannot be advanced without obstructing the passage of the light at present intercepted by it.

The base of the pyramid (fig. 1 A) representing, as has been said, the area of sky from some part or other of which all the light that reaches the aperture $a\,b\,c\,d$ must come, the directions of the various pencils of light must clearly cross one another at various points within the figure representing the volume of light below the level of the obscuring horizon shown in fig. 1 B. The apex of the inverted pyramid (fig. 1 A), a point some distance above the surface $a\,b\,c\,d$, will be the point where the pencils of light from the extremities (north, south, east, and west) of the intercepted area of the sky $a'\,b'\,c'\,d'$ intersect one another.

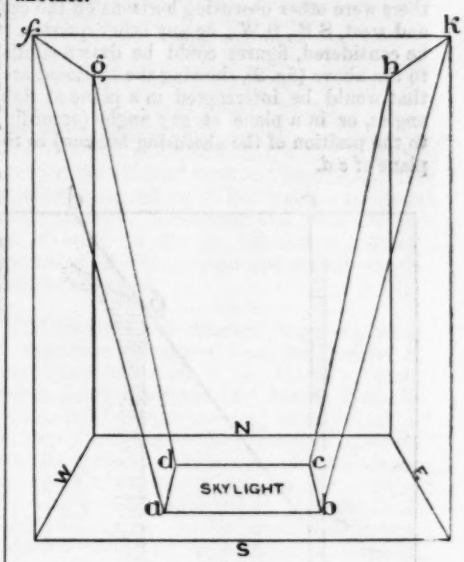


*Fig.* 1 *B.*

It will be seen, moreover, that the pencils of light from the extreme N.E., N.W., S.E., and S.W. points respectively of the area $a'\,b'\,c'\,d'$ will be intercepted at the extreme S.W., S.E., N.W., and N.E. points of the aperture $a\,b\,c\,d$ respectively, and may be represented, as in fig. 1 **A**, by the lines $a'\,a$, $b'\,b$, $d'\,d$, and $c'\,c$ respectively. The case of a horizontal skylight in the position above described is only here referred to because it affords, perhaps, the simplest illustration of the principles involved. Moreover, it can be easily seen from this illustration (as represented in the sketch) what would be the effect of moving the position of the aperture $a\,b\,c\,d$ (for example) in a direction due east. It is clear that the area of sky would be extended on the west and proportionally diminished on the east side, while its breadth from north to south would remain unaltered. Suppose the aperture to be moved in the E. direction till its side $c\,b$ falls on the base of the wall $h\,k$; then suppose its movement continued upwards in a plane at right angles to the horizontal (in which it was originally), and for the skylight we now have a window,* of the same size and shape, in the wall on the east side. What is the effect of this change of plane upon the sky area intercepted? In the first place, that area has been reduced on the east side, since the side $a\,d$ (now the lower side of the window $a\,b\,d\,c$) has moved a considerable distance eastward, and, therefore, the line $a'\,d'$ (which, as explained above, must always be in the same plane with and parallel to the lines $h\,k$ and $a\,d$) must have moved westward, and would now ($a\,d$, as has been said, being in the plane of the wall) be in the plane of the wall produced. In the second place the sky area will have been extended in a westward direction, since, in proportion as the line $c\,b$ advances in one direction the line $c'\,b'$ will have advanced in the other. Meanwhile the breadth of the sky-area from north to south will have been enlarged. In the simple case first considered the intercepted "sky-area" would be represented by the base of an inverted pyramid. In the case of a window the intercepted area would be represented by the base of an irregular figure to some extent resembling a pyramid and having as many triangular sides as there were different planes in the obscuring horizons. But the extent of the said area in any given direction could clearly be estimated on the principles applied above.

For instance, let $a\,b$ in fig. 2 represent a window in a vertical plane placed in a wall facing south (viewed in section), and $g$ the

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* Scott *v.* Pape, reported in 31 Ch. D., 566.

† 2 and 3 Wm. IV., c. 71 (1832), s. 3.

‡ Homersham Cox on "Ancient Lights."

§ See judgments and arguments in the case cited above, and in Ancient Light cases, *passim*.

‖ It will be observed that "direct" light alone is here considered, for the following reasons:—(1) That it may (it is submitted) be assumed, with sufficient nicety for practical purposes, that the amount of *reflected* light would vary, *cæteris paribus*, as the amount of direct light: and (2) there seems no ground for supposing that a right could be acquired to "reflected" as distinct from "direct" rays or pencils, or that the mere alteration by the owner of the servient tenement of the reflecting properties of its surface, could form the subject of an action at law.

¶ Which is assumed, in the following argument, to which, however, the point is immaterial, to be the same plane as that of the surface of the wall in which it is set.

** For the scientific expression of this, and the trigonometrical measurements of the illumination and obscuration of a glazed window, see the "Optics" of "Ancient Lights" in Mr. Homersham Cox's work on the subject.

* For, whatever be supposed to be the surface of the area or arc of sky from which the light is (*ex hyp.*) derived in the first instance, every part of that area must be included in the τέμενος represented at any given altitude by the plane figure $a'\,b'\,c'\,d'$, as viewed from any point within $a\,b\,c\,d$.

† When regarded as a *solid figure*, it represents the volume (see above), the whole body of light reaching the aperture.

* Represented by the part shaded dark in fig. 1 A.

obscuring horizon on the south side. The sectional area of sky intercepted from *a b* will clearly be bounded on the north side at the point *c* in the plane of the wall produced, and on the south side at the point *d* in the line *a g d;* and consequently the line *c d* may be taken to represent the sectional area intercepted from north to south, by the window *a b*. Supposing there were other obscuring horizons on the east and west, S.E., S.W., or any other quarter, to be considered, figures could be drawn similar to the above (fig. 2), showing the sectional area that would be intercepted in a plane at right angles, or in a plane at any angle (according to the position of the obscuring horizon) to the plane of *c d*.

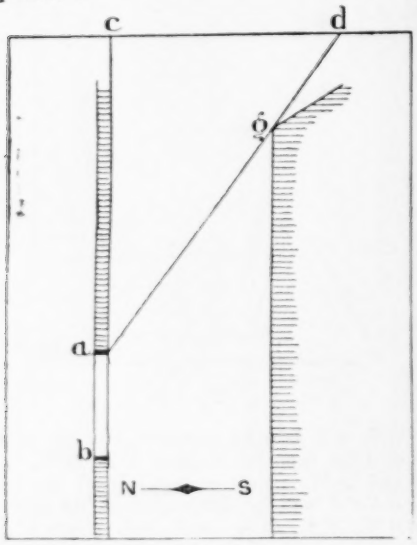


*Fig.* 2.

Having reminded the reader of the above principles, we pass on (still considering, for the sake of simplicity, the sectional area intercepted by the window in one plane only) to inquire what the law provides in the case when either the position of the window in the wall, or the plane of the wall itself, is altered. To what extent are the supposed plaintiff's rights affected or impaired (for, of course, they cannot be increased) by such alterations? Let us suppose the plaintiff has acquired a prescriptive right to the access of light to the window *a b* (fig. 3), the obscuring horizon of the servient tenement being represented by the point *g*. Then let the plaintiff's wall be advanced from the position X to the position Y. Now in considering exactly what is meant by "abandonment," we may begin by observing that the mere advance of the plaintiff's wall from the plane X to the plane Y will of necessity deprive him of the enjoyment of a considerable quantity of light which he before enjoyed, viz., of all the direct light coming from the sectional area of sky, *k l*. But inasmuch as this deprivation is entirely due to the plaintiff's own act (and could not in the nature of things affect the rights of the defendant, the owner of the servient tenement), we may dismiss it from consideration. The only "abandonment" which it is necessary to discuss may be defined as the relinquishing by the plaintiff of some right which restricted the defendant in the enjoyment of his property. In fact, if we say that whatever acquired right the plaintiff intentionally ceases to enjoy, constitutes a corresponding restoration of or addition to the rights of the defendant, this statement will only require to be modified by the legal maxim, "De minimis non curat lex."

Now, for the legal answer to the question propounded above, we need refer no further back than to the afore-mentioned case of Scott *v.* Pape,* in which the most important decisions on the subject are reviewed. The legal right is there stated to be retained in respect of a new window, "*which includes in its area a substantial part of that of the original window*," *i.e.*, which if the new wall were laid upon the old wall so that their bases coincided, would *substantially coincide with the old window*. Dozens of judicial expositions of this principle might be cited, were it not well known to be supported by all authority. So long as there is a preservation of a material part of the old aperture so long there is no abandonment of the right, and if there is no preservation of any material part of the old aperture, the right is understood to be abandoned, and therefore lost. This is a perfectly plain and simple principle, and in accordance with it the plaintiff in the aforesaid case of Scott *v.* Pape* (decided in February, 1886) did not venture to ask for relief (in the form of an injunction) with respect to those of his new windows (his building having been advanced towards the servient tenement), which could *not* be proved to "correspond" with ancient lights in the original building.

But the various declarations of the law on the subject seem to suggest, in conjunction with the above, another and a different theory, which has only been imperfectly developed. We find it authoritatively stated† that if the plaintiff continues to use, through his new apertures, "the same or substantially the same cone of light" which he enjoyed before, then there is no legal abandonment.‡

In another place§ the prescription stated is defined as the right "to have arrive for the use of your house" the pencils of light "which during the twenty years passed through the original aperture," to have "the space within‖ lighted in the same manner" in which it was lighted through the old windows. At the same time "structural identity" is not, we are told, "the test." The measure of the enjoyment is not the aperture itself, but "the size and dimensions of an aperture in that position" (*scil.* that of the original window). To apply these principles of law to the case supposed (see fig. 3), the sectional area of the sky, intercepted by the original window *a b*, will be represented by the line *k a'*. It is clear that there will be pencils of light from the extremity *a'* of this area passing along the line *a a'* through the aperture *a b* to *o*, some object within.

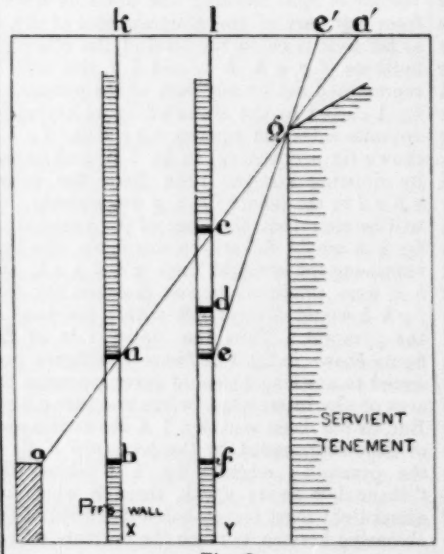


*Fig.* 3.

Now, if in the new wall, a window, *e f* (in exactly the same position, relatively, as *a b*), be substituted for the original window, there will be, according to the first principle stated above, no abandonment at all; for the window, *e f*, not only substantially, but exactly, coincides with the original window, *a b*. But it is clear that no pencils of light from the point *a'*, or, indeed, from any point of the sky area between *e'* and *a'* can possibly "arrive" at *e f*, and that the "space within" is therefore not (in any ordinary sense of the words) lighted "in the same manner" as before. In fact, no direct light arriving from any point of the sky area between the points *e' a'* can possibly reach any window placed below the point *e*. But if the access of light which was enjoyed before is now no longer enjoyed, surely it has been in fact and in law abandoned? Conversely, it is obvious that if the plaintiff, having acquired the supposed rights in respect of the window *a b*, wishes to continue in the enjoyment of these rights in so far as is compatible with the alteration in the plane of his wall, far from placing his new window in the position (*e f*) of the old one, he must raise it to the position *c d* (the point *d* being supposed to be in a straight line with the points *g* and *b*). If he puts his new window in any position lower than this, he will, in fact (if not in law), be ceasing, to a greater or less extent, to enjoy the access of light, to the enjoyment of which he has acquired a right. Is it possible, then, to follow such clear ennunciations of the law as are quoted above with regard to "pencils of light," "cones of light," &c. (the only sensible interpretation of which points to the above conclusion), and, at the same time, carry to its logical results the principle which seems to attach such a magical importance to identity of position,—in fact, to a fictitious "correspondence" between the old and new windows? Suppose, for example (in fig. 3), the window *c d* were the original window, intercepting the area of sky, *l a'*, and the plane of the wall were moved from Y to X (*i.e.*, retired from the servient tenement). If for the original window, *c d*, a new window, *a b*, were substituted, then according to all authority, the rights acquired in respect of *c d* would be "abandoned," notwithstanding that, as a matter of fact, the same pencils (to a considerable extent) pass through *c d* as passed through *a b*, and this could not be the case with a window in the position *e f*. Why then is the latter said to be lighted "in the same manner" as *a b*? Again, supposing *e f* to be the "original" window intercepting the area of sky *l e'*, and the wall (Y) to be pulled down and rebuilt in the same plane, the only alteration in the building being a substitution of a window *c d* for the original window *e f*, according to the principles of law at present applied, the plaintiff has "abandoned" the right he had (*ex hypothesi*) acquired in respect of the window *e f*. Yet all the area of sky intercepted by the aperture *e f*, and a good deal more,* is still intercepted by the aperture *c d*.†

## CUSTOMARY CHARGES.

THERE is unquestionably a common idea existing among professional men that what may be termed "customary charges" are binding on those with whom they do business. This idea is perhaps more strongly rooted in the minds of architects than of any other body of men. It arises from the fact that the usual remuneration for an architect's services, viz., 5 per cent. commission on the total cost of the works executed from his designs, forms the subject of the first of the schedule of rules issued under the sanction of the Institute. In the same way, quantity surveyors usually have a regular charge, and land surveyors and house agents have scales of remuneration which are almost universally the same among all members of the particular profession. There can be no question that a customary scale of charges, if it be a reasonable one, has many advantages, for it may be taken

* See Ap., 560; also the recent decision of Newson *v.* Pender, reported 27 Ch. Div., 43; or see recent text-books *passim*,—Shirley's "Leading Cases in Com. Law," p. 238 (1883 edition).

* See p. 556 of the Report in 31 Ch. Div.

† *E.g.*, per Cotton, L.J., 31 Ch. Div., p. 570; and see the cases cited.

‡ Of the meaning of this language we have spoken above. It has been already submitted that the material points to consider are not so much the form in which the light is thrown into the building, lessened or not by refraction, but (1) the "volume" of light (below the level of the obscuring horizon) which illuminates the plane of the aperture (glazed or otherwise); and (2) the area of sky from which the pencils of light constituting that volume are derived.

§ See remarks of Bowen, L.J., 31 Ch. Div., pp. 572-4.

‖ *Ib.*, per North, J., whose decision was affirmed by the superior Court.

* But this, the enjoyment *pro tem.* of more than he had a prescriptive right to, has (since the decision of Tapling *v.* Jones, reported 11 Ho. of Lords Cases, p. 290) no prejudicial effect on his existing rights. Probably it would never have occurred to any but a legal mind to maintain the contrary, which was equivalent to arguing that the owner of a right of way should lose that right if he trespassed in his neighbour's field; but, if possible, more absurd, since the plaintiff's action (in the case of light) could hardly, by any stretch of language, be described as a trespass.

† To be continued.

to be a fair average profit for the person who receives it, and a fairly reasonable payment to be made by the customer, based on a considerable mass of experience. On the other hand, there is always this danger, viz., that the person who habitually charges a sum common to most of his professional brethren regards it as one which he has a kind of legal right to be paid, and consequently he takes, in many cases, no special precautions to have this sum agreed upon before the work is begun. The consequence is that in some cases the customer disputes the amount, and the professional person—architect, surveyor, or what not,—finds to his surprise that his account is docked by a British jury, who, whatever may be their professional feelings out of the box, are usually actuated by a kind of corporate pleasure in cutting down the charges of professional persons. More cases of this description occur than many people are aware of. They very often do not, indeed, come into court at all; sometimes they are settled by the acceptance of a smaller sum than that originally charged for the sake of peace; sometimes they are referred to arbitration, and so do not find their way into the public prints. Not very long ago, for example, the surveyor to a waterworks company who had done work in surveying for the purposes of a Parliamentary Committee had his account largely docked by an official referee. We allude to this case not in anyway for the purpose of commenting upon it, but merely as an instance of the manner in which from time to time these professional charges are cut down. The fact is that no charge of a customary character, even one so generally recognised and accepted as the five per cent. charge of architects, is legal unless it is a reasonable charge. The tendency of all persons outside a particular profession is to minimise the value of professional services. They are apt to overlook the value which must be paid for experience, for professional education, and to suppose that because an architect takes a comparatively small time over a plan, or a lawyer over the composition of an opinion, they are to be paid for the work without taking other matters than the mere expenditure of time into consideration, just as if a professional man were a day labourer, who occupied a certain number of hours in digging a certain plot of ground. There is no question that the charges of land surveyors are to the outside world frequently startling, but the public are apt, in connexion with them, to overlook the many things which are requisite in regard to the formation of a surveyor's opinion. On the other hand, there probably exists an opposite tendency in the minds of professional men to overvalue the indirect elements for which they make a charge. When all these different tendencies and conflicting views have to be taken into consideration by one or more individuals, whose minds may also have some individual leanings of their own, the difficulty in a disputed case of arriving at what may be regarded as a reasonable sum, can scarcely be overrated. But it cannot too often be pointed out that the proper course for every professional person to follow is, as a rule, to let his charges be known beforehand, and obtain, at any rate, a verbal assent to them. If this were done, many unfortunate disputes would be avoided. So far as architects are concerned, this is, in regard to matters falling within the first of the Rules of the Institute, the simplest thing in the world. Nothing is easier than to show a client a copy of the rules or to inform him that it includes the scale to be charged, and to obtain from him an assent to this. Whether the customary charge be in the particular case reasonable or unreasonable then becomes immaterial, for there is an express contract by the client to pay at this particular rate. But unless a professional man can, as a solicitor is empowered to do, charge a fee settled by an Act of Parliament, he must sooner or later find himself in difficulties when he relies on obtaining in every case and from every client payment of a customary charge. A customary charge, convenient as it may be, cannot from its very nature, in all cases, be a fair one, and its very convenience and general use thus makes it in some instances a trap. There are, it is obvious, other objections to a customary charge, as that individual labour receives no greater remuneration than work done by means of a subordinate. Persons may differ as to which disadvantages are of the least weight, but there can be no doubt in regard to the point to which we have chiefly confined ourselves, viz., that a customary is not necessarily a reasonable and a legal charge.

## NOTES.

THE Railway Bill passed through Committee in the House of Lords on the 1st inst., and several discussions took place upon the traffic clauses, Lords Bramwell, Grimthorpe, and Brabourne again displaying great energy on behalf of their "clients." A motion to restrain the companies from making charges for station terminals was withdrawn, as it was opposed by the noble lords just named with an ardour which is interesting and significant to contemplate, and did not receive much support from the rest of the House. Only one amendment to clause 24 was adopted, providing that the maximum rates and charges under the revised classifications shall be, on the whole, equivalent to those which the companies have already been authorised by Parliament to receive. The apparently apathetic way in which the House thus agreed to the important provisions of this clause may be attributable to Lord Salisbury's remark that they were not by this Bill giving final sanction to any decisions of the Board of Trade. When the latter arrived at decisions involving any change Parliament would be asked to say whether they were reasonable or not. A division was taken on sub-section 2 of the "undue preference" clause, which, it will be remembered, allows the Commissioners to take into consideration whether reduced charges are necessary for the purpose of securing traffic. The railway companies, whose adherents numbered 49 against 11, assert that their action in giving special facilities to imported traffic is out of consideration for,—or, at least, results in benefit to,—the community at large; so the clause is retained, ostensibly in the interests of the consumer. The "conciliation" clause was struck out altogether, it being argued that the reason this system had answered in America was because they had no other court to go to; and the 29th clause, relating to the publication of tolls and charges, is also omitted. It is significant that these amendments were all recommended by the manager of the Great Western Railway (Mr. Grierson), in a long letter to the *Times* on the same day; and Lord Stanley appears to admit, by the manner in which he has abandoned some of the provisions of his measure, that they were only inserted on account of having appeared in last year's Bill. Further alterations, and possibly some additions, may be looked for when the measure is before the House of Commons.

WE have received a circular emanating from some commercial gentlemen in North Wales, calling attention to the desirability of altering the law in regard to limited liability companies. The object is to prevent directors giving orders in excess of the means of the company, whereby on the winding-up of a company creditors become losers. The means suggested to prevent this mischief are (*a*) to make directors personally responsible for expenditure beyond the resources of the company, (*b*) that there should be a compulsory reserve not to be used except when a company is wound up. The amount suggested is 10s. uncalled for every pound of capital called up. There is a good deal to be said in favour of this proposal. It would be very desirable to make directors more careful, and to prevent companies spending their last shilling; on the other hand, those who give credit to companies of doubtful credit have only themselves to thank if in consequence they lose money. It is possible to obtain information and guarantees. Much of the loss complained of arises, in fact, from reckless competition, and those who give credit without taking security, or without inquiry, must bear the blame if they go unpaid on the winding-up of a company.

THE value of land in New York does not appear to be so high as in the City of London, if one may judge from a recent sale of two plots in Broadway, which, as all the world knows, is one of the principal thoroughfares in that city. Nos. 135 and 137, Broadway, two contiguous plots, one of which was a corner plot, were put up for sale by auction. The inside plot was purchased by the Niagara Insurance Company, and realised 142 dols., or about 29*l.* 10s. per square foot, which is much less than the value of land in Cornhill and its neighbourhood, where it has reached as much as 40*l.* per foot. The corner plot, with a frontage of only 15 ft. on Broadway, realised upwards of 73,000*l.*, but the rate per foot superficial is not stated.

IN all likelihood the Bank of England governing body will appeal from the decision in a case heard last week in the Queen's Bench, by Mr. Justice Day and Mr. Justice Wills, in the matter of the Mayor and other officers of the Staple of England. In reversal of a verdict obtained at the trial before Mr. Baron Pollock, the Court adjudged, though, as Mr. Justice Day said, with some reluctance, that the Bank should recoup to the Corporation a certain, their sole remaining fund of 4,250*l.* Consols, which had been misappropriated by their clerk. The plaintiffs represent a now effete Guild-merchant. Under protection of King Edward III. the Woolstaplers were established (1353) in the New Palace ward of St. Margaret, Westminster, parish. Yet Stow says that "this church [St. Margaret's, as rebuilt by Eadward the Confessor] continued till the days of Edward I., at which time the merchants of the staple and parishioners of Westminster built it all of new, the chancel excepted, which was built by the Abbots of Westminster." Having for a long while exercised main control over the once staple product of our country, the Corporation gradually sank into insignificance on the increasing importation of fleeces from beyond the seas; nor can the charter which they obtained from Charles II., together with a mace and silver common seal, be regarded as more than a passing *succès d'estime*. Tradition goes that Richard II. removed them to fresh quarters in Holborn, which having been converted, *temp.* Henry V., into an Inn of Chancery, yet retain the style of Staple Inn. A woolpack, by the way, formed the cognisance of that lately-dissolved society. Still, the Staplers did not dissever connexion with their earlier home, for in 36 Henry VIII. they established on their Westminster property an almshouse, known as St. Stephen's Hospital. Demolished *circa* 1745, that hospital was rebuilt in the neighbouring St. Anne's-lane. At that time, too, were pulled down a watergate and strong round tower, being the Long Staple,—site of the present Bridge-street,—for the western approach and abutment to Labelye's (old) Westminster Bridge. An assessment of "Orlando Gibbons, ij$^{d}$," in the Woolstaple is entered, in 1628, upon the overseers' books for the parish of St. Margaret. With the name of Staple Inn may be compared that of Stael, or Stapel, Hof, corruptly termed the Steelyard, as appertaining to the Hanse and Almaine, or Easterlinge, merchants, who originally settled by All Hallows, in Upper Thames-street, in 1250. Yet in a law of Æthelrhed the Easterlingas, coming with their ships to Billingsgate, are cited as "the Emperor's men," and receive royal protection accordingly.

THE competition designs for the new façade at Milan are to be sent in on the 15th. There seems to be an anxiety (not unnatural) on the part of some German competitors to ensure the presence of some German and English representatives on the jury. The appointed members of the jury are mostly Italians, and the competitors, among themselves, are to vote for four other members. A German correspondent begs us to put before English competitors the consideration that

if English competitors vote only for Englishmen as judges, and German competitors only for Germans, neither will get votes enough to be elected, and the specially elected will consist entirely of Italians, and, at the most, one Frenchman. He therefore suggests that English and German competitors should arrange to vote for two Englishmen and two Germans, to be agreed on among themselves, so as to secure the election of German and English representatives on the jury. Our German correspondent proposes, as the German members to be voted for, Herr Hase, Privy Councillor and Baurath, of Hanover, and Herr von Statz, Baurath, of Cologne; and writes, "please recommend the names of two English gentlemen for whom the German competitors may unite their votes." Whether the German and English competitors generally will accept this suggestion we cannot say, but as we certainly agree that it is desirable that English and German architects should be represented on the jury of this international competition, we have recommended the names of Mr. Pearson and Mr. Waterhouse as the other two judges for whom the German and English competitors should unite their votes.

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ON the motion of Mr. D. Plunket on Tuesday night, it was agreed "That a Select Committee be appointed to reconsider the plans and proposals for an Admiralty and War Office; and that it be an instruction to the Committee to report whether some or all of the existing buildings of the Admiralty may not, with advantage, be retained." The following were appointed the Select Committee:—Sir William Harcourt, Lord George Hamilton, Mr. Henry H. Fowler, Mr. Jackson, Mr. Sclater-Booth, Mr. Shaw-Lefevre, Colonel Malcolm, Mr. Howell, Mr. Isaacs, Mr. Dillwyn, Mr. Edward Hardcastle, Mr. William Bright, Mr. Seager Hunt, Sir William Crossman, Mr. Patrick Joseph Power, Mr. Byrne, and Mr David Plunket. The Committee includes an architect (Mr. Isaacs), but we are not aware that any of the other members appointed are publicly known for any interest in or knowledge of architecture. The question whether some of the existing buildings of the Admiralty may with advantage be retained is of course put in purely for the economists, architecture being generally regarded in the Legislative assembly as merely a matter of pounds, shillings, and pence, not of beauty or of national honour and glory. The point which ought to be impressed on the Committee is that the design which Mr. Shaw-Lefevre has endeavoured to put upon the country is one which, from an artistic point of view, is exceedingly devoid of genius or interest, the execution of which in its present form would cause general disappointment to the few Englishmen who care about architecture.

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THE collection of works by Mr. Watts, which was on view at Christie's at the close of last week, drew a considerable number of visitors, who were, it must be said, enticed there under rather false pretences, the preliminary notice which was got into the *Times* specifiying, among the works to be seen, "Love and Death," "Love and Life," and two or three others of the painter's greatest works, without giving any suggestion that these were not the large paintings, but only small replicas or studies. The collection (the property of the late Mr. Rickards, of Manchester) was, however, a fine one as far as it went, including some of Mr. Watts's best portraits, and a number of imaginative paintings, studies of ideal characters, portraits of children under various ideal titles, &c. Among these, one called "Pretty Lucy Bond," which had never been exhibited, is a very charming child study, rather after the feeling of some of Sir J. Millais's child studies, though, of course, sufficiently different in technique. Another was the exquisite half-length of a blue-eyed child with a shell, entitled "On the Seashore," one of the most beautiful child pictures ever painted by any artist, ancient or modern. Among the things that exhibit Mr. Watts's power of conveying intellectual interest or deep pathos through the medium of very slightly-executed studies, two were to be remarked, the "Sir Perceval," a small sketch of a knight in armour walking through a forest, and "The Bridge of Sighs," a mere indication of a drowned figure and the cold water flowing past the bank, but of deeper interest than many a lesser artist's most finished works. "The Return of the Dove to the Ark," which has been "cracked up" rather immoderately in the communications furnished to the daily papers, appeared to us now, as it did when painted many years ago, a failure, owing to the totally impossible treatment of the water, in long parallel ridges as if the waves were drawn with a ruler. Among the portraits was the earlier (and *not* the best) of Herr Joachim, of whom the artist painted a finer and more dignified portrait at a later period, and that of Mr. Russell Gurney, one of the best and most characteristic of all Mr. Watts's portraits. The collection, including more than fifty works, formed a beautiful exhibition of what may be called the poetry of colour, even considered apart from subject, of which Mr. Watts is such a master.*

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THE loan exhibition of the works of Bonnington, Cattermole, Holland, Nash, De Wint, and William Hunt, which was held for three days last week at the rooms of the Society of Painters in Water Colours, served to remind us of the peculiar faculty of Jas. Holland in painting architecture. His Venetian pictures are remarkable for the brilliant effect of light in them, and for the solidity and clearness with which the architecture is delineated. De Wint's architecture, on the other hand, is in many cases very bad; it is a mere wash with no stone or brick texture, and an utter ignoring of detail. His view of the west front of Lincoln Cathedral is a travesty. On the other hand, the "Old Houses, Lincoln," lent by Mr. Huish, is a superb bit of the kind, going to the very root, as it were, of the picturesque properties of old buildings of this kind. Here there was no architectural detail, properly so called, to paint; only the varied surfaces of old bricks, stone, and timber, and their various stages of decay and lapse from the perpendicular. The drawing illustrates better than most the peculiar union of breadth with the greatest delicacy in gradation and contrast of tone which characterises De Wint's execution when at his best. Cattermole's works, despite their brilliancy, when collected together have an air of great sameness, and a want of distinctive character in the countenances and figures, for which his brilliant execution and perception of colour cannot altogether atone. In the large work called "Montrose," for instance, which is obviously intended as an illustration of that scene in "The Legend of Montrose" where Montrose, disguised as Lord Menteith's attendant, is suddenly made known to the assembled Highlanders, the countenances are those of so many dummies or "supers"; the arrangement of the picture is effective in a stage sense, but that is all. Nash's large interior of Westminster Abbey is an illustration of the change in ideas of pictorial treatment of architecture; the effect is fine and true in general, but it will not bear looking into; there is neither the texture of stone, nor the true detail of the carving, &c. Nowadays we have become accustomed to demand so much more from the artistic illustrator of architecture than the last generation demanded. Holland comes nearer the modern mark in this class of work than either De Wint or Nash. There were some capital flower studies of Holland's also in the collection. As to the examples of William Hunt, they were marvellous as examples of splendid realistic painting of flowers and still life of various kinds, combining the most brilliant execution with the most delicate perception of form and colour. In this class of art one can hardly suppose that Hunt can ever be superseded; he carried it to perfection.

* Since the above remarks were written, we have had occasion to observe the remarkable prices brought by many of these small works at the sale which followed; a gratifying practical proof that, in spite of the realistic and sensational tastes so prevalent, there is a public, "fit though few," that knows the value of intellectual work like that of Mr. Watts.

IN answer to a question from Sir A. Borthwick on Monday, Sir W. Hart Dyke said that the Committee appointed in July last to consider the question of the action of light on water-colours was deferring its report until a series of experiments by scientific experts on the action of light on various pigments and their mixtures had been completed. We hope it is to be inferred from this answer that we are likely to get some definite information as to facts when the report of the Committee does come out, since a Parliamentary Committee has been appointed on such an inquiry. The subject seems, to say truth, rather out of the proper line of the Legislature.

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WE greatly regret to learn from an article in the *Indian Engineer*, that the series of "Professional Papers on Indian Engineering," for many years periodically issued from Roorkee College, have put in their last appearance, and will be seen no more. The publication, which seems to have been carried on at a pecuniary loss for some time back, was a very well got-up one, often containing papers of unusual and special interest, to the consideration of which we have from time to time devoted some space. We are very sorry to have seen the last of them.

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THE "Society of British Artists" has been drawn yet further into the meshes of Whistlerism this year; the number of works hung is still further reduced; the draping of the gallery is as effective as ever; and artists who have not before been known as "impressionists" are vying with each other in their efforts to catch the style of the presiding genius. Mr. Whistler's own contributions are not happy this year. His portrait of a lady, under the title "Arrangement in Violet and Pink" (157), is not pleasant in colour, and the face of the sitter is made to look as if it were in want of a thorough scrubbing with soap and water. The "Nocturnes" hung on either side of this have the same kind of merit as many others by the same artist; they are good as effects; even this cannot be said of "Harmony in Grey,—Chelsea in Ice" (165), which appears to be an effort to try how much people will swallow. Among the known and professed followers of Mr. Whistler, Mr. Jacomb Hood has an ugly but characteristic portrait of a lawn-tennis player, "Game and Set" (103), in flannels, and relieved against a white wall, according to the now favourite trick of composing paintings entirely of various whites. M. Roussel's "Portrait of Mortimer Menpes, Esq." (121), looks as if it were a good likeness, but a more ridiculous piece of affectation than the treatment of the whole it would be impossible to imagine; the sitter is in evening dress relieved against a pink wall, with a red fan flung on the floor beside him. The efforts of M. Ludovici, jun., to be ridiculous in the prevailing mode are even more noteworthy, and in such a thing as "Youth" (18) he seems to reach the acme of vulgarity possible in painting. Among the things which it is any pleasure to look at (and they are a small proportion of the whole) are "The Approach to London" (116), up the Thames that is to say, by Mr. Wyllie; the fine interior of Nuremberg Cathedral (126), by Mr. Wyke Bayliss; and a large painting of a coast scene in a gale, with a ship outside, "Helpless" (146), by Mr. T. C. Gotch and Mr. Ayerst Ingram: we presume the sea is due to the latter artist, and the figures to the former; the sea carries off the honours of the day; there is a fine wild effect of wind and boiling sea in the picture. The exhibition is certainly more interesting in a sense than the exhibitions at this gallery used to be for a long time; but there seems to have been a rush from the extreme of dulness to the extreme of affectation.

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THE exhibition of "The new English Art Club," now open at the Dudley Gallery, includes a good many names not familiar to us, but we fail to discover any predominating principle which is to distinguish this collection of artists, or give a *raison d'être* for their special exhibition, except a tendency to paint

unfinished pictures: and some works which look at first sight very original are found on consideration to owe this impression a good deal to the fact of their being splashily painted and with no attempt at showing detail. The "Landscape" by Mr. Walton (36), and "Study of a Cloud," by Mr. W. L. Wyllie (85), both exhibit a vertical column of cloud piled up in a grand mass, but the cloud is laid on with a trowel, so to speak, and seems more solid than the ground over which it hangs; and this coarse, rough work gives a sort of special *cachet* to the painting, which is what is wanted. Mr. Sargent has a life-size portrait of a lady (55) which has plenty of character, and the background is very effectively sketched; but it would be every bit as good if the arms were more like flesh and less like dough. Mr. Roussel's life-size of a "Reading Girl" (3) hangs at the opposite end of the room, showing a "young person" reading before her fire *in puris naturalibus*, her clothes being thrown over the chair back. The figure is well drawn and expressive enough, though ugly (but ugliness is beauty in the New Art Club), and the rather washy style of execution and unreal and dingy flesh colouring are perhaps of service in giving a slightly ideal appearance to what would otherwise be a too realistic work. That is one of the advantages of not finishing a picture; the conception may be the most prosaic, but a sort of poetry is imparted to it by leaving out detail. Mr. A. Harrison's big picture "In Arcady" (78), has not this assistance even: it shows a scene in a wood with flashing sunlight through the leaves, very vividly represented, in which two or three vulgar blowsy milkmaids have stripped themselves for the fun of the thing. Technically the picture is very clever; in other respects, more especially in connexion with the idea and associations of "Arcady," it is a piece of blatant vulgarity. "Stone Pickers" (32), by Mr. G. Clausen, one of the "dauntless three," shows feeling and character, but is not of a power to make all Royal Academicians tremble for their laurels; and two or three of the best landscapes in the room are the inferior works of well-known painters, such as Mr. Aumonier and Mr. Parsons. By far the best picture in the room, if feeling and pathos as well as technique are to count for anything, is "The Battle of Life" (92) by the secretary, Mr. T. B. Kennington: the interior of the home of a working man who cannot get work; each figure is carefully studied; the result is a picture painful certainly, and which few would bear to keep in their room, but marked by true and unaffected pathos, the more notable from the many affectations by which it is surrounded.

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WE referred some little time back (see p. 378, *ante*) to an extraordinary statement made by the *Journal of Education*, to the effect that the delay in opening the Royal Holloway College was partially due to the absence of drains. We showed that this statement was unfounded, and we now learn that the *Journal of Education* has apologised to Mr. Crossland, the architect of the building, for its serious misstatement. The fact is that the drainage arrangements are stated by Sir Robert Rawlinson to be "in all respects complete and satisfactory." So much for the *Journal of Education's* would-be smart quip that drains are "a detail that architects have a way of overlooking."

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DR. TANNER inquired of the First Commissioner of Works, on Tuesday, whether his attention had been called to the danger to pedestrians which the improvements at Hyde Park Corner had brought about. We pointed out long ago the certain inconvenience which the blundering in laying out the site would cause, independently of its utter ineffectiveness. Now, after it is done, people are beginning to find out the mistake; but that is the way we do in London.

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IN addition to the new theatre that is about to be built in the Strand, and to which we adverted in our columns of the 2nd inst., sites have been taken in London for three more. Of these, the first lies in Oxford-street, between Hanway-street and the Oxford Music-hall, being where the Star Brewery used to stand. Some of our readers may remember the two ravens that used to mount guard at the yard-gate. The second site is in Shaftesbury-avenue, whereon Mr. Hollingshead intends to erect a large playhouse having three frontages, the principal one to face towards the Avenue. The third proposed new theatre is a suburban one, and is to be located at Brixton, in Canterbury-road, just behind the London and County Bank, and opposite to the Police-station, near the end of Stockwell-road. Mr. C. J. Phipps, F.S.A., is designated as the architect of this theatre.

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THE first London Exhibition of the "Société d'Aquarellistes Français," opened this week in the Goupil Galleries, is an artistic event of some interest. If we take it to fairly represent French water-colour art, it may be said at once that in landscape, at all events, the branch of art so specially suited to the capabilities of water-colour, the French can come nowhere near to the leading English water-colour artists of the day, the best landscapes in this collection being such as would be passed over as of little account at the Society of Painters in Water Colours. The exhibition is a peculiar one as compared with our own; the works of each artist are grouped together; the numerous and brilliantly-painted military groups of Detaille give a special character to it. Further on we have a set of sporting pictures by M. Béthune and M. Olivier de Penne; a painting of "setters" by the latter (41) is remarkable for truth and spirit of action in the animals. Framed designs for fans abound. The strong point of the exhibition consists in the brilliant execution of figures in pure water-colour; the point in which our own water-colour exhibitions, in spite of Sir James Linton and Mrs. Allingham, are on the whole the least conspicuous. In addition to the work of Detaille, may be mentioned in this respect "Les Loisirs d'un Réserviste" (6), by M. Loustaunau, and the brilliant and charming little series of illustrations to "L'Abbé Constantine," by Madame Lemaire. This gifted artist's flower and fruit pieces are also beautiful, and she appears to show equal mastery in both classes of subject. MM. Maurice Leloir & Paul Pujol contribute some good architectural subjects. The exhibition should be seen, both for the sake of the admirable work in certain lines which it contains, and for the characteristic contrast it affords with English exhibitions of the same class of work. It may be added that the works of the "impressionist" exhibitors, in the smaller room, may afford the English visitor the consolation of knowing that in this respect there are even greater humbugs on the other side of the Channel than on this side.

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## ST. OLAVE'S CHURCH, OLD JEWRY.

THE Wednesday Divinity Lecture which was delivered on the 23rd of March was the last religious function to be celebrated within the walls of St. Olave, Old Jewry. The parish is to be united with certain others, and the church is marked for speedy demolition. Scarcely has the last brick been removed of St. Matthew's, Friday-street, Cheapside, before another work of the same architect, Wren, has to share a like untoward fate. Its effacement forms part of a scheme that has just been accomplished for the union of the parish of St. Olave with the parishes of St. Martin Pomeroy, St. Mary Colechurch, St. Mildred, Poultry, St. Christopher-le-Stocks, St. Margaret Lothbury, and St. Bartholomew-by-the-Exchange; and for the appointment of the Rev. Prebendary Ingram, rector of St. Margaret, as the first rector of the united seven parishes.

Most of the names we mention carry us back to very early times. St. Martin Pomeroy, or Pomary, by the Orchard, one of the smallest parishes in London, was joined to St. Olave after the Great Fire; no trace of it remains except the graveyard between that church and Ironmonger-lane. So similarly with St. Mary Colechurch, also in the Ward of Chepe, which was united with St. Mildred, Poultry. Named after its founder, and situated in Old Jewry, at the southern end of Coneyhoop-lane, where now is Frederick's-place, this church is only remembered, perhaps, in connexion with its chaplain or clerk, Peter, who died just four years before the completion, in 1209, of his stone bridge* across the Thames, and was buried in the chapel of St. Thomas thereon. Yet Stow reminds us "that Henry IV. granted license to William Marshal and others to found a brotherhood of St. Katharine therein, because Thomas à Becket [who was born in a house on the site of the Mercers' Chapel hard by] and St. Edmund the Archbishop were baptised there." The churchyard, to the south-west of Old Jewry, is now built over. St. Mildred's, Poultry, as rebuilt by Wren, was standing until about fifteen years ago behind the houses in the Poultry that lay between St. Mildred's-court (*prius* Scalding-alley) and Chapel-place, and close to the site of the Poultry Compter, the only prison, by the way, in London that had a separate ward for the durance of Jews. The site of St. Christopher-by-the-Stocks-market, otherwise known as St. Christough, in Threadneedle-street, was taken for the south-western portion of the Bank of England at the enlargement of the Bank in 1788. There its graveyard is still preserved as "the Garden"; whereby, under the statute 9 Anne (1709–10), was established "the General and Chief Penny Post-office." Hatton, in his "New View," gives a succinct account of the church of 1462, and says that "the Walls were not burnt down by the terrible flames of *Septemb.* 1666; but the church was very much damnify'd, the Pillars and Arches, the Pews, Lead, and Six Bells being destroyed . . . . . All the old Part which the Fire left is of the *Gothick* order; but the Pillars within, &c., are of the *Tuscan*." Its three-storied tower, with angle pinnacles, are shown in T. Malton's aquatint of October 1st, 1781. The present Sun Fire Office, Threadneedle-street,† denotes the position of St. Bartholomew-by-the-Exchange, which was founded by Nicholas Yeo (Sheriff in 1438) and Thomas Pyke. Having been restored by Wren, it was demolished in 1840 at the building of Sir William Tite's Royal Exchange. The general design, including the four singular doorways or window-frames with which Wren terminated the old tower, is reproduced in Cockerell's Church at the corner of Moor-lane and Tenter-street.

The tale of Wren's City churches that have been destroyed is lengthening apace: the first to go was St. Christopher, followed, after an interval of about fifty years, by St. Michael, Crooked-lane, for the approach to new London Bridge. Then followed St. Bartholomew-by-the-Exchange, and its opposite neighbour, St. Bennet Fink, conspicuous for its domed ceiling, borne upon eight columns of Corinthian order. Next we lost the beautiful spires of St. Michael, Queenhithe, and St. Bennet, Gracechurch-street; the pinnacled tower of All Hallows, Bread-street, which surely a reverence for Milton's memory might have spared; the perfect Ionic façade of the eastern front of St. Dionis Backchurch; and then St. Antholin's, so rich in its associations of religious life during the sixteenth and seventeenth centuries; the wanton destruction of whose exquisite stone steeple leaves us small hope for Wren's already threatened masterpieces of St. Margaret Pattens and St. Mildred, Bread-street. Truly enough, his Church of St. Olave, Old Jewry, has no ambitious design; yet its tower, rising from the ground in four stages, and surmounted with angle obelisks capped with balls, is very pleasing. The vane staff, capped with a gilded ship, is appropriated for a multiplicity of telegraph wires, that must now find support elsewhere. The daily press is pleased to deny to this fabric any architectural attractions whatever. He who writes thus is dead to any appreciation for the well-devised eastern elevation, immediately over against Old Jewry-chambers, with its large and nobly-planned window. This church, formerly known as St. Olave Upwell, is of ancient foundation, being scheduled in the survey of Ralph de Diceto, dean 1181–1204, as one of those collated to the Dean and Chapter of St. Paul's. A north aisle was added in 1450 by Thomas Morestead, who was chirurgeon to the kings Henry IV., V., and VI. He was buried in that aisle, and Weever has preserved his epitaph:—

"Thomas Worsted gist ici,
Dieu de s'alme eit merci.
Amen."

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* Peter is said to have constructed a wooden bridge a few yards eastwards of the later one in 1163.

† The original Sun Office was also taken for the Bank of England.

Of other worthies interred here may be mentioned Robert Large, mercer (1440), a munificent benefactor to certain civic charities, and the master of Caxton; Sir Humphrey Weld, Lord Mayor in 1608, whose widow's foundation of the Wednesday Lectures was enlarged by Sir John Frederick; and Giles Dewes, servant to Kings Henry VII. and Henry VIII., and, according to Strype's Stow, "clerk of their libraries, and schoolmaster for the French tongue to Prince Arthur, and to the Lady Mary." Also Sir Nathaniel Herne (son-in-law to Sir John Frederick), for whom, as for Sir Robert Clayton,—the fanatick Lord Mayor of Dryden's "Religio Laici,"—Wren built two of the fine mansions for which Old Jewry was once renowned. Clayton's house was pulled down about twenty-five years since, having for awhile served as the home of Professor Porson when librarian to the London Institution. Here too are the tomb and monumental tablet of Alderman John Boydell, died 12th of December, 1804, the celebrated engraver and printseller. To his liberal patronage of the arts, combined with his collection of what is known as the Shakspeare Gallery, may fairly be ascribed a notable impetus to our later school of historical painting. Boydell had removed from the Unicorn at the Queen street corner, Cheapside, to a shop formerly 90, Cheapside, by the corner of Ironmonger-lane. The remains of the dead will be removed to Ilford cemetery, under care of the Commissioners of Sewers.

Destroyed by the Great Fire, St. Olave's was rebuilt in 1673–6 at a cost of 5,580*l.* 4s. 10d. Hatton gives us the following dimensions of Wren's fabric:—"Le. of the church, 78 foot; br. 34; altitude, about 36; and that of the Tower to the vertix of the Pinacles about 88 foot; wherein are only 2 bells."* This is one of the four London churches which were dedicated to the memory of the Norwegian Olaf, son of Harald Ghrinska, king and Christian martyr, who fell in battle against the rebel Thore Hund, at Stikkelstad, on August 31, 1030, the cry of "Fram, Fram, Kristmen Krossmen Konungmen" resounding from his dying lips. It had one Unfred for priest, *temp.* Henry II. At the Dissolution the living devolved upon the Crown, having been previously granted, by a lease, to Butley Priory, county Suffolk. Old Jewry commemorates an early settlement here of the Jews before their expulsion from England in 1290 under Edward I. Their synagogue in this street passed into the hands of some friars,—the *Fratres de Sacco*,—and ultimately was adapted as a "mansion-house" for several lord mayors in succession. On the northern side of Meeting House-yard, a *cul-de-sac* out of Old Jewry, is a gate opening on to a range of steps. The steps lead downwards, and to a much greater depth than one would expect to find, to an inclined approach to some premises in the rear of Coleman-street. The descent is too sudden and too steep to be explained in the ordinary way; and there is no record of any watercourse or the like thereto which might account for so rapid and deep a depression in the ground level.

* A New View of London, 1708. Vol. ii., fo. 449.

## THE ACTON DRAINAGE SCHEME.

### EXPERIMENTS IN SEWAGE TREATMENT.

At the laying of the memorial stone in connexion with this work, by Mr. Wm. Roebuck, C.E., Chairman of the Local Board, on Tuesday week last, some interesting experiments were made in a new system of treating the crude sewage. Before referring to these, however, it may be interesting to note the somewhat peculiar circumstances under which Acton was compelled to construct the new drainage scheme, now nearly completed, according to the designs and plans of the Acton engineer, Mr. C. Nicholson Lailey, at a cost of nearly 100,000*l.* Unlike the other districts along the Thames Valley, Acton was not driven to the necessity of running its crude sewage directly into the Thames. The Stamford Brook, an ancient waterway, had been the sewage outlet for Acton from time immemorial; but the Metropolitan Board, in order to utilise its carrying power, incorporated it into their drainage system. The Metropolitan Board three years ago, curiously enough, obtained an injunction against the Acton Local Board, restraining them from putting the sewage of houses built after the date of that order into the Stamford Brook. Although the sewage of all those houses built antecedent to the injunction was still permitted to enter the brook, Acton was compelled to construct a comprehensive drainage scheme, in order to provide for the requirements of the many new houses being built wide apart all over the parish. In some instances, therefore, an expensive long length of sewer is laid for the drainage of one or two new houses. The Acton Board tried earnestly and repeatedly to come to some arrangement with the Metropolitan Board by which the Local Board would divert at once to the river the large quantity of surface storm water from the Harrow uplands which flowed into the Stamford Brook, and increased unnecessarily the cost of pumping at Barking. This the Local Board undertook to do on condition that it was allowed to use its ancient sewage outlet for sewage only. But the Metropolitan Board were obdurate, and preferred to go on pumping millions of gallons of storm-water of which it could easily have got rid. The Acton scheme is carried out upon what is known as the separate system, and consists of a high and low level. The sewage from the high level finds its way to the outfall at the works by a 3 ft. by 2 ft. egg-shaped sewer, and from the low level by a 2 ft. 6 in. circular sewer. The sewage from the latter is lifted to a height of 36 ft., when the high and low level sewage is mixed with chemicals. It then gravitates into the precipitation tanks, each capable of containing 140,000 gallons. There is also an effluent water tank for storing the effluent during high tide in the river Thames when there is a back flow in the effluent sewer. The storage-tank is capable of containing the same quantity of liquid as one of the other tanks. The effluent sewer, which discharges the clarified sewage into the river at Mall Eyot, Chiswick, is 24 in. in diameter, which enables the tank to be emptied ready for use in thirty-five minutes. In addition to the tanks, some suitable buildings with neat elevations have been erected for the chemical treatment of the sewage. These buildings stand in two blocks; the engine, boiler, and coal-house to the east, and the chemical buildings in one range stand directly in front of the precipitation tanks. At the rear is constructed a sludge-well, into which the sludge from the precipitation tanks gravitates, from which it is pumped into the pressing-room, and pressed by Drake & Muirhead's patent presses, then ground in the grinding-room, and after being dried is put into bags as a manure. The works are situated at the lowest portion of the Board's district, between Acton and Bedford Park, on a triangular plot of land, comprising in all five acres and a half. Near the entrance of the works is an attendant's lodge in the "Queen Anne" style, and the ground is being laid out round the buildings and precipitation tanks. The cost of the scheme is about 80,000*l.*, and it is confidently hoped that its operation will improve the health-condition and stimulate the prosperity of the district. The Board has not fixed upon any particular mode of chemical treatment, some negotiations for that purpose with the ABC Company having, from some cause or other, fallen through. The Board are desirous, however, of adopting the most effective and economical method that can be found; and through the chairman, an invitation was given to Dr. A. Angell, of the County Laboratory, Southampton, and Mr. Candy, Director of the International Water and Sewage Purifying Company, to demonstrate the capabilities of their system of treatment, and the Acton tanks were put at their disposal. These experiments were of more than ordinary interest, as this was the first occasion on which the company had conducted experiments in dealing with sewage at any public sewage works. One of the precipitation tanks was filled with crude sewage from the Stamford Brook now connected with the metropolitan system, as the main sewers of the new scheme will not be in operation till June next. The sewage was charged with the chemical salts of the company, the principal feature of which compounds is the absence of lime, which is largely used in most other precipitation sewage works throughout the country.

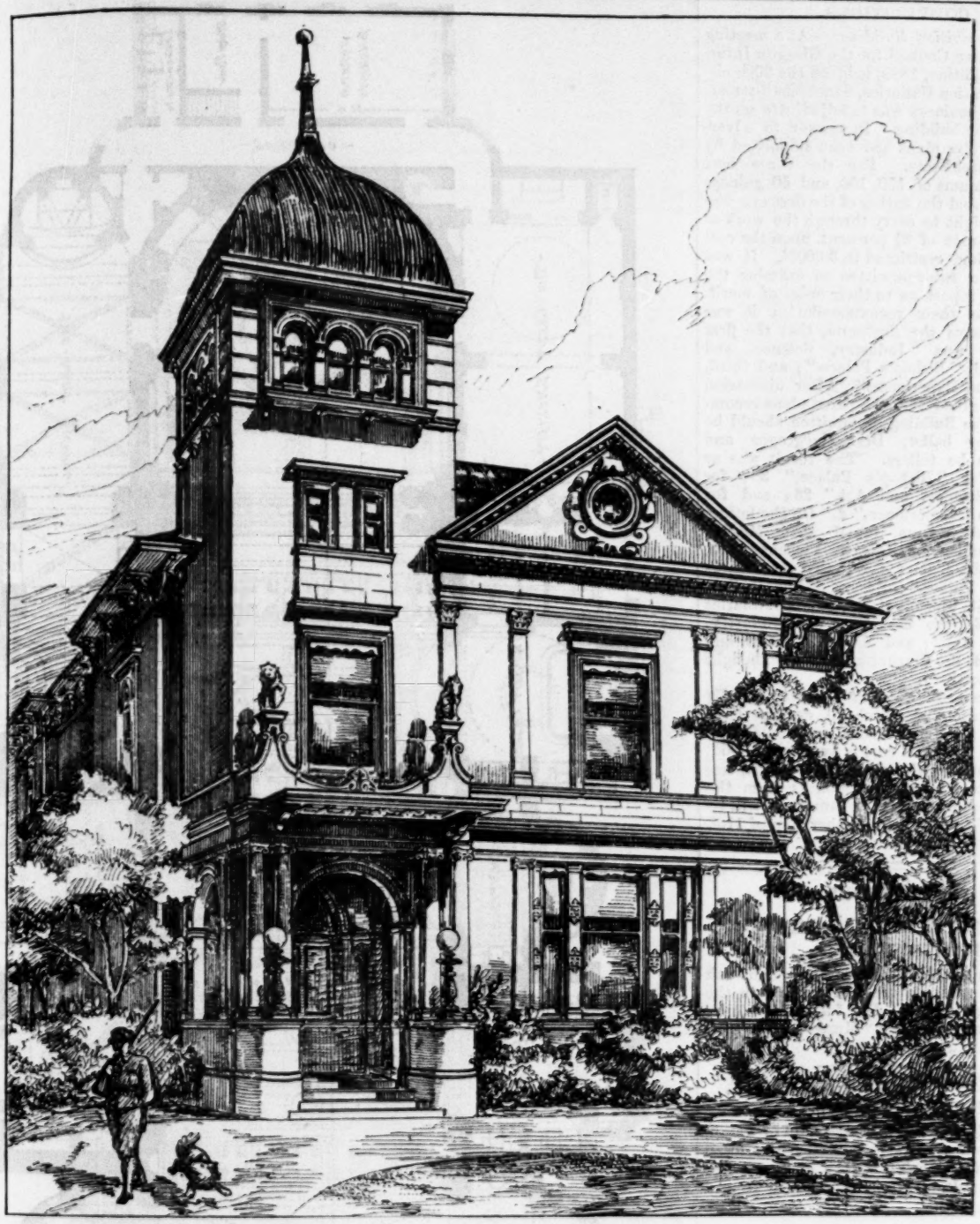
These "sewage salts" consist for the most part of sulphate of magnesia, sulphate of alumina, and a small quantity of sulphate of iron; in addition to which the company use a powder called magnetic ferrous carbon. One of the difficult questions connected with the chemical treatment of sewage has undoubtedly been how to retain in the sludge the ammonia and sulphuric acid, which are, to a greater or less extent, lost in the "lime process." It was contended for the company that it has solved the problem by the substitution of ferrous or iron compounds for lime, by means of which the manurial value of the sludge is greatly enhanced, and that instead of the sludge lying in offensive accumulations at the pumping stations it will be very extensively used by farmers. It was stated by Dr. Angell and Mr. Candy, in the course of their experiments, that these materials can be used as economically as any other kind of chemicals. The treated sewage in the experimental tank was allowed to remain quiescent for nearly two hours, though it was asserted that precipitation could be completed in an hour, and then run off into the open channel at the mouth of the effluent sewer. As seen against the white glazed bricks of the bottom of the channel, the effluent, it must be admitted, had not that white appearance which is desired in official quarters, but bore a red tinge, though without any opaqueness. It was explained that this tinge was entirely due to the presence in the precipitants of the iron, which it was pointed out, was not only harmless, but rather a purifier of the water of any river with which it might commingle. The presence of iron was demonstrated by the application to a pailful of the liquid of a testing agent, which gave the resulting green colour to the effluent. Some members of the Board expressed a preference, however, for the white effluent; as people generally, and perhaps inspectors, might not always understand that the red colour was due to such an innocent element as iron. It was pointed out that eight grains of the iron compound had been used per gallon of sewage, but a less quantity would suffice, and would reduce to a large extent the red tinge. A small quantity of the red effluent was afterwards put through a miniature filter bed, composed of a central layer of the company's magnetic spongy carbon, with layers of sand on each side, and in a minute or so the iron-coloured effluent came away limpid and clear like filtered water, and without smell.

The contract for main sewers has been executed by Messrs. Nowell & Robson, and by Mr. George Osenton, of Erith, Kent, whilst the outfall buildings, pumping station, and precipitation tanks have been constructed by Messrs. John Mowlem & Co., of Westminster.

## GLASGOW INTERNATIONAL EXHIBITION.

Progress is being made against the opening of the Exhibition next year, a design by Messrs. Campbell Douglas & Sellars, architects, Glasgow, having been approved and adopted. The leading idea makes few pretensions to novelty, consisting as it does of a great central avenue or nave lying east and west and intersected midway by a transept of equal dimensions as to width and altitude; the show-courts, fine-art galleries, and dining-rooms filling up the rest of the oblong. The grand hall at the east entrance is on a line with the nave, and, indeed, practically forms a portion of the unbroken promenade when not shut off for those reception and general ceremonial functions for which it is specially designed.

At the intersection of the nave and transept rises the dominating feature of the elevation, a dome 80 ft. in diameter at the base, and rather over 100 ft. in height. The housing of the Fine Arts section is provided for at the south-west angle of the edifice, where, for fireproof purposes, the prevailing timber of the general structure becomes brick for both outer and inner walls, with corrugated iron for roof covering. Distinct from the main building, which measures 880 ft. by 360 ft., to the west of it, and on a 6 ft. lower basement level, stands the less ornate machinery annexe, 300 ft. long by 250 ft. broad. The general site flanks the left bank of the River Kelvin, over against the southern façade of Glasgow University, which extensive cluster of stone and lime, including the famous Bute Hall, occupies the bold crest of Gilmorehill, a few hundred yards back from the stream. Opposite the Exhibition and upon the Park ground between the college and the right bank of the river it is proposed to erect a full-sized presentment, in improvised and temporary materials, of course, of the old "Bishop's Palace" of Glasgow, which from early in the fourteenth



*House, "Oakleigh," Pembury, Tunbridge Wells.—Mr. George Lethbridge, Architect.*

century to the close of last century (latterly in a state of hopeless ruin) stood on the line of the High-street in the immediate vicinity of the stately cathedral which has so happily survived it. This reproduction is, in dimensions and architectural details, to follow as closely on the lost original as a somewhat imperfect knowledge of former actual conditions will permit; and it is intended that the larger apartments of the revived palace shall be set aside for that portion of the Exhibition which for its interest depends on the concerns of archæology and antiquarian rarity. As the old palace was of considerable extent, and possessed some claims to magnificence, even, the material likeness now contemplated will prove no light effort in a byway of the builder's art; but if accomplished to reasonable satisfaction, the added attraction will undoubtedly be important. It is remembered with interest in this particular connexion that the rural castle or country quarters of the old bishops of Glasgow stood on the banks of the Kelvin, at only a trifling distance away; and further, that the same building was not so very long since demolished to help in making way for the spreading tenements of ship-building Partick. The Exhibition site is within the bounds of the city's west-end park, occupying that portion in ordinary times set apart for football and like pastimes. On three sides it is bordered by streets, and on the fourth or north by the left bank of the winding Kelvin, which, after flowing through the park, and threading the less desirable purlieus of Partick, falls into the Clyde about a mile away. The grand entrance is on the north, facing the western suburb of Hillhead, and in direct line with Bank-street and University-avenue, the approaches across the park from that quarter being served by two bridges, side by side, which debouch right in front of the entrance doors. In style the design is somewhat Oriental in character, and the central dome is relieved and sustained by attendant towers, minarets, and spires at various angles and intersections. The corner of park ground chosen is not perhaps the most desirable, being uneven of surface and offering but poor margin for the adornment of arboriculture; but the finest part of the permanent park is quite at hand, and will sufficiently serve for purposes of outdoor variety to visitors. The Kelvin, unfortunately, is not so pellucid as it was in the days when the old bishops rusticated on its banks; but possibly in view of next year's exhibition the very natural solicitude of the authorities may result in some temporary alleviation, if nothing more, as regards its rather questionable look and odour.

## HOUSE, "OAKLEIGH," PEMBURY, TUNBRIDGE WELLS.

The above illustration shows a new front to this house, the additions consisting of porch and entrance-hall, with bed and dressing rooms, &c., over. The materials used are, for the exterior, Peterhead granite for columns and pilasters, and Portland stone for the other portions of the work. The porch is finished in various coloured marbles, with mosaic ceiling and floor. The entrance-hall has a high dado of mahogany, dull polished, and the upper parts of the wall are furnished with Tynecastle tapestry, with a ceiling of the same material. The floor of the hall is of black and white marble. All the windows are fitted with double sashes, and all the walls are built hollow. The architect is Mr. George Lethbridge.

**Prof. H. G. Seeley's Geological Field Class.**—It is intended to form a class, including beginners and advanced students, this summer, in the same way as last year, for the study of geology near London, to be conducted on Saturday afternoons, by Prof. H. G. Seeley, F.R.S., King's College.

## COMPETITIONS.

*Glasgow Exhibition Buildings.*—At a meeting of the Executive Council for the Glasgow International Exhibition, 1888, held on the 30th ult. in the Corporation Galleries, Sauchiehall-street, the principal business was to adjudicate on the designs for the building. In answer to advertisements, twelve plans had been submitted by competing architects. For the three best designs, premiums of 150, 100, and 50 guineas were offered, and the author of the first one was to have the right to carry through the work of erection at a rate of 2½ per cent. upon the cost of the building, restricted to 30,000*l*. It was remitted to a sub-committee to examine the designs and report as to their order of merit. According to their recommendation it was understood, says the *Scotsman*, that the first prize design was "Industry, Science, and Art"; second, "Bishop's Palace"; and third, "Thought and Experience." After discussion the Council agreed that the three plans recommended by the Building Committee should be voted on by ballot, Drs. Macgregor and Robertson to be tellers. The result was as follows:—For "Bishop's Palace," 38; for "Industry, Science, and Art," 23; and for "Thought and Experience," 2. On the letters being opened it was found that Messrs. Campbell Douglas & Sellars, St. Vincent-street, along with Mr. J. Barr, C.E., were the authors of "Bishop's Palace"; Messrs. J. Burnet, Son, & Campbell, St. Vincent-street, with Mr. Charles Lindsay, C.E., the designers of "Industry, Science, and Art"; and Messrs. P. Smith and H. E. Clifford, St. Vincent-street, of "Thought and Experience."

*New Government Offices at Christiania.*—By Royal Resolution of March 16, designs have been invited for a new Government building at Christiania. The total cost is fixed at 75,000*l*., the State providing the site. The designs are to be submitted within six months from the above-mentioned date. Five premiums will be offered, of 55*l*. each, and a further sum of 110*l*. awarded for the design chosen.

# Illustrations.

## THE BUREAU DES MARCHANDS-DRAPIERS, PARIS.

THIS is an old building rebuilt, and with modern sculpture and carving in the centre portion. For further reference to it, see the article on the "Musée Carnavalet" in the present number.

## DETAIL OF PRINCIPAL ENTRANCE, CITY HALL, ALBANY.

THIS is a fine example of the kind of detail, based on Byzantine types, which has been worked out in America by the genius of the late Mr. Richardson. It is reproduced from a photograph.

## VESTIBULE OF THE CASINO THEATRE, NEW YORK.

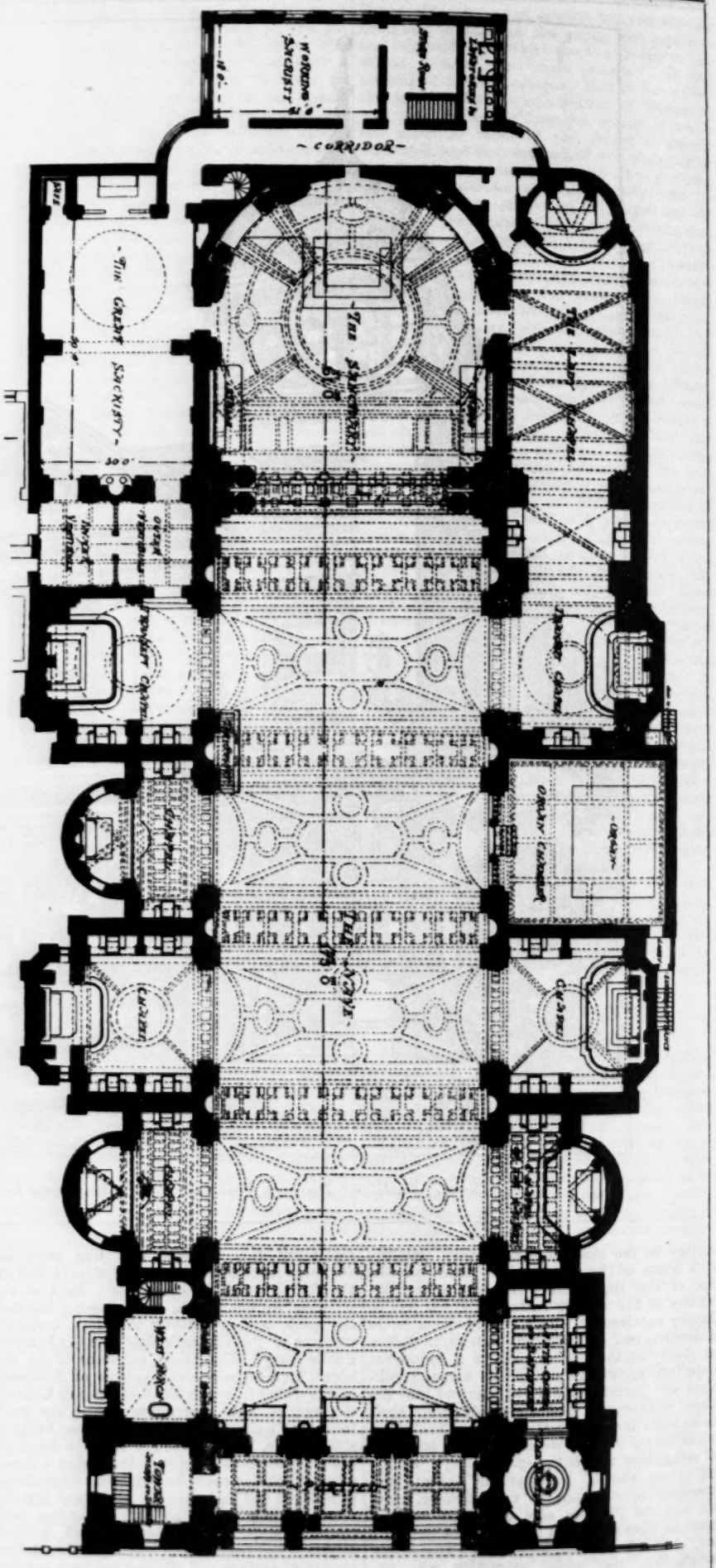
THIS, which is not a new building, but one of comparatively recent date, we give as an example of the manner in which Eastern types of decoration and detail are being adopted more or less in American architecture. In this case there is more of mere reproducing, however, than in the doorway referred to above. It does not fall to many architects to have the genius of Richardson for shaping new forms out of old.

## DESIGN SUBMITTED FOR THE LONDON ORATORY.

THE design an interior and exterior of which we now publish was that sent in competition by Messrs. Goldie & Child.

The style was, as required by the conditions laid down, that of the Italian Renaissance. The materials proposed to be used were brick for the structure generally; in the interior, slabs of rich marble for the pilasters, panels, &c.; columns and balustrades of the same materials, as also the exposed portions of the floors. The caps were to be of bronze, and the walls and ornaments were to be finished in some fine cement,—designed, as was the vault, to allow of the introduction of a great amount of rich decoration.

The exterior generally was to be faced with malms, with Portland stone dressings. The upper part, the campaniles, and the whole of the west front, however, were to be entirely of the latter material.


CORRIDOR
THE GREAT SACRISTY
THE SANCTUARY
Chapel
Chapel
Chapel

Drawn by H W Brewer

INK PHOTO. SPRAGUE & Co LONDON

MESSRS. GOLDIE AND CHILD'S COMPETITION DESIGN FOR THE LONDON ORATORY, BROMPTON.

INTERIOR VIEW.

Drawn by H. W. Brewer

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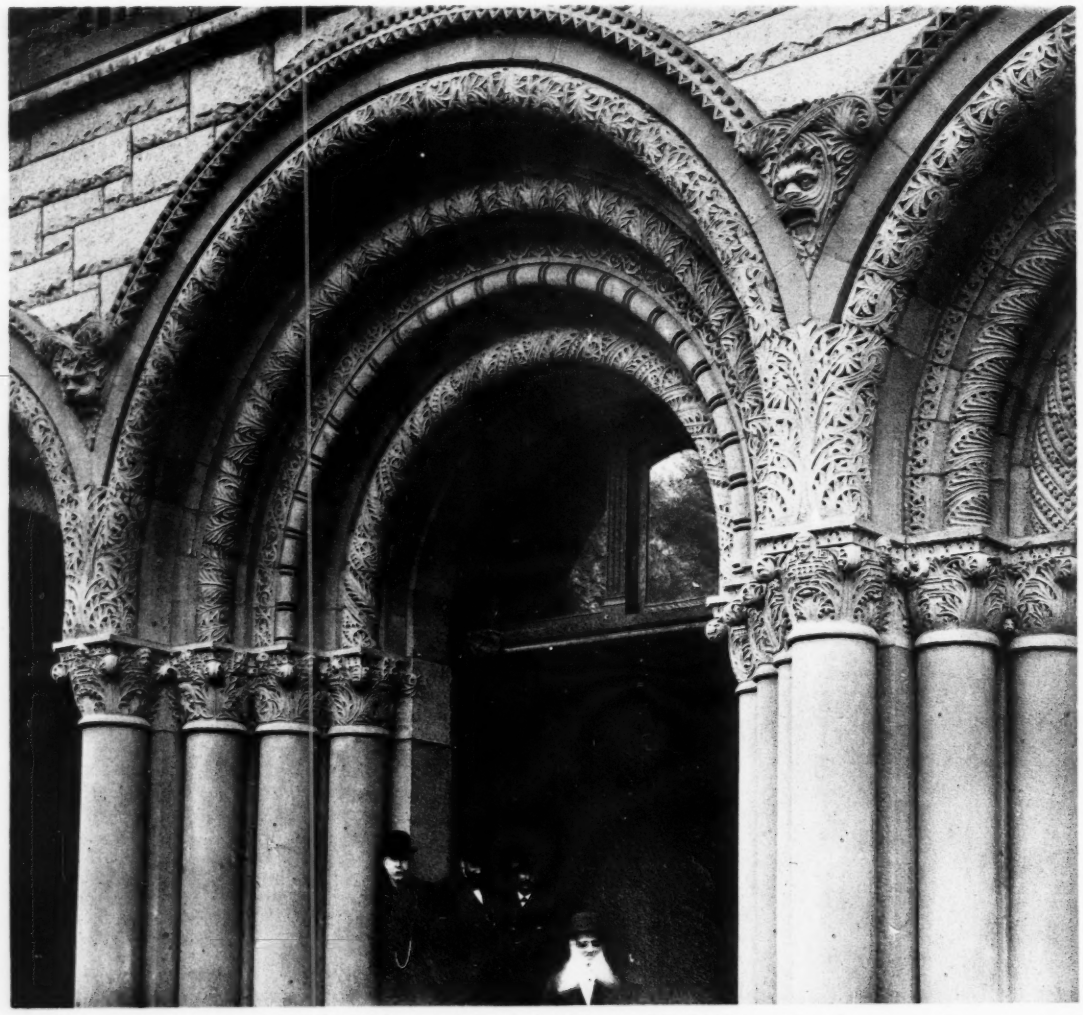
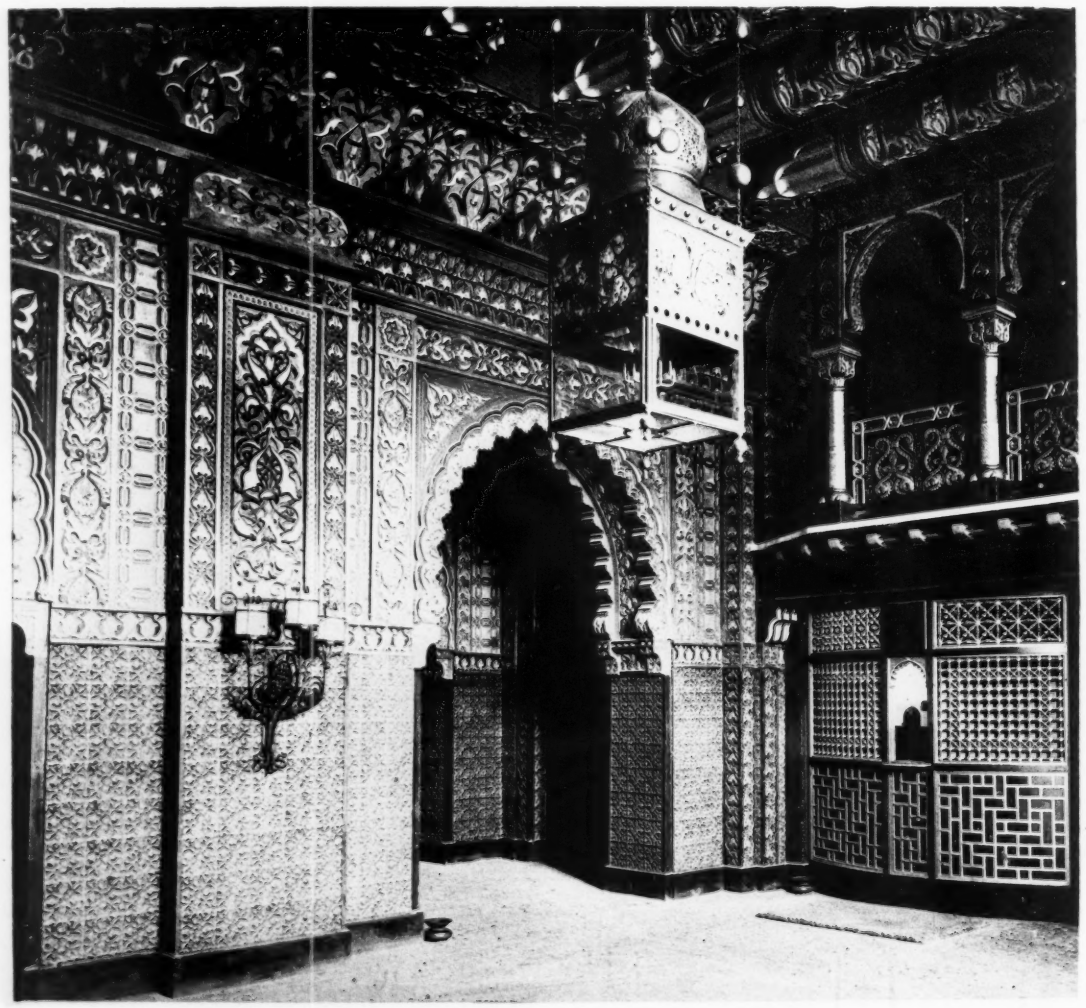
EXTERIOR VIEW.



DETAIL OF PRINCIPAL ENTRANCE, CITY HALL, ALBANY. THE LATE H. H. RICHARDSON, ARCHITECT.



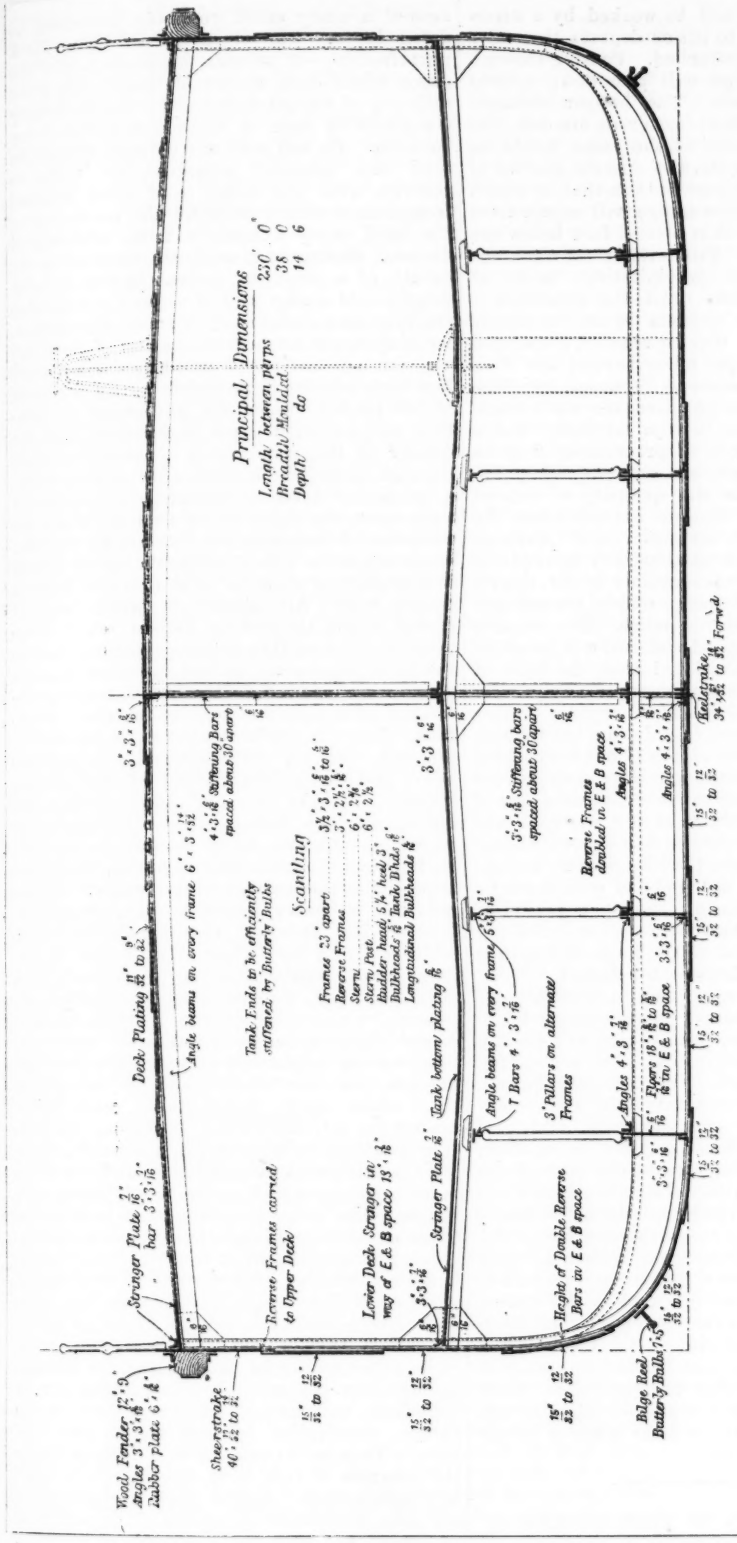
The Phototype Co., 303, Strand, London.

VESTIBULE OF THE CASINO THEATRE, NEW YORK. MESSRS. KIMBALL & WISEDELL, ARCHITECTS.

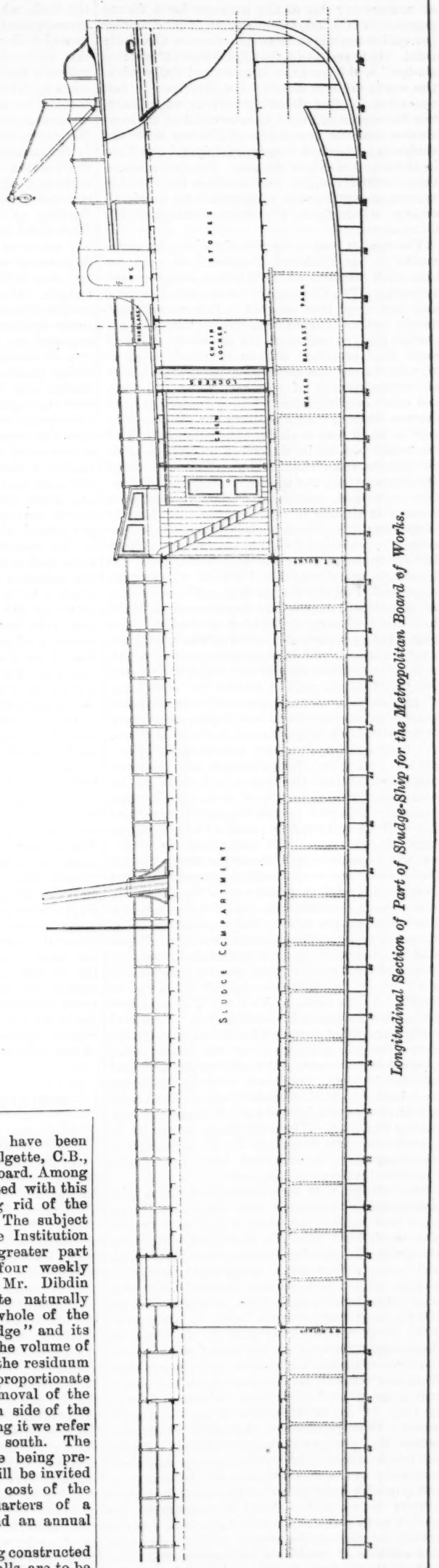
The Phototype Co., 303, Strand, London

THE OLD "BUREAU DES MARCHANDS-DRAPIERS," PARIS—Upper Portion.

The Modern Sculpture by M. Gautier, and the Ornamental Detail by M. Villeminot.




*Midship Section of Sludge-Ship for the Metropolitan Board of Works.*




*Longitudinal Section of Part of Sludge-Ship for the Metropolitan Board of Works.*

## SLUDGE-SHIPS FOR THE LONDON SEWAGE.

THE public are generally aware that extensive works are being constructed by the Metropolitan Board of Works for the purpose of treating the sewage of London by a chemical process, with a view to prevent the pollution of the Thames. At present the sewage is discharged into the river at two points, one a little to the west of Barking Creek, and the other at Crossness Point, somewhat further down the stream on the opposite shore. The Barking outfall is an outlet for all the metropolitan sewage north of the Thames, while the Crossness outfall in like manner discharges the southern sewage. Works for the precipitation of the sewage and the removal of the sludge are to be established at both the outfalls. The contract for the northern works has recently been taken by Messrs. J. Mowlem & Co., and commencement has been made with the preliminary operations. The contract price is 406,000*l*., and the works are to be finished in eighteen months. The chemical process has been devised by Mr. W. J. Dibdin, F.C.S., F.I.C., the chemist to the Metropolitan Board, the method having the approval of Dr. Dupré and other eminent chemists. The works, which are very extensive, and altogether of a novel type, have been designed by Sir Joseph W. Bazalgette, C.B., the Engineer to the Metropolitan Board. Among other remarkable features connected with this undertaking, the plan for getting rid of the sludge takes a prominent place. The subject has engaged the attention of the Institution of Civil Engineers during the greater part of a discussion extending over four weekly meetings, a paper prepared by Mr. Dibdin serving as the text. The debate naturally digressed into a review of the whole of the sewage scheme, but "sewage sludge" and its disposal was the avowed topic. The volume of the London sewage is vast, and the residuum from the precipitated process is of proportionate magnitude. The plan for the removal of the sludge will be the same for each side of the river, and consequently in describing it we refer to the entire volume, north and south. The plans for the Crossness works are being prepared, and the requisite tenders will be invited at no distant date. The entire cost of the scheme is reckoned at three-quarters of a million for the capital outlay, and an annual charge of 118,000*l*.

The precipitation works now being constructed at the Barking and Crossness outfalls are to be adapted for the treatment of 156,000,000 gallons

of sewage per day as the average for a future population of 5,200,000. A grain of solid matter per gallon corresponds to ten tons in the daily total. It is reckoned that 3,000 tons of "settled sludge" will have to be disposed of daily when the works on both sides of the river are in full operation. After debating various expedients, the Metropolitan Board have arrived at the conclusion that the best mode of dealing with the sludge is to have it conveyed beyond the Nore in ships and cast into the sea. For this purpose they invited designs and tenders for suitable vessels, and numerous proposals were received, among others from the Barrow Shipbuilding Company.

The design sent in by this Company was submitted to Sir Frederick Bramwell, in conjunction with Sir Joseph Bazalgette, and received approval. The Company's tender was accepted and one ship was ordered. Future arrangements are, of course, uncertain, but it is expected that as many as six or seven ships of some kind or other will be required, so as to provide for the due removal of the sludge under all circumstances of weather, wear and tear, and other contingencies. The contract with the Barrow Shipbuilding Company for the one ship now in hand was sealed a short time back, and the vessel was to be delivered at Crossness in six months from that period. This will bring the delivery into the month of July, and Crossness is named, inasmuch as the precipitation process is already in partial operation there in connexion with experimental works, and a considerable quantity of sludge has been produced. The contract price for the ship is 15,750*l*. On the whole, something like 100,000*l*. will have to be expended on the sludge fleet. The ship now being built will have a load displacement of 1870 tons, and will carry 1,000 tons of sludge. The length between perpendiculars will be 230 ft., the moulded breadth 38 ft., and the moulded depth 14 ft. 6 in. When loaded the draught forward will be 9 ft. 9 in., and aft 10 ft. 1 in. The form of the ship is characterised by considerable breadth in proportion to her depth. She may be described as long and broad, but very shallow. Her light draught forward will be 2 ft. 4½ in., and aft 7 ft. ½ in. When coaled, and trimmed with water ballast, the vessel will float on an even keel with a draught of 5 ft. 9½ in. The material employed in the construction of the ship will be principally steel, of a quality to stand Lloyds' tests. The stem and the sternpost will be of iron, and the main deck of steel. The engines and boilers will be placed abaft the sludge-hold, and propulsion will be given by twin screws, the available speed to be not less than ten knots per hour. The engines are to be of the triple expansion type, in two sets. Steam is to be generated in two multitubular marine boilers of mild steel, with iron tubes, each boiler being 11 ft. in diameter, by 10 ft. 3 in. in length. There will be two of Fox's patent corrugated furnaces to each boiler. Powerful pumps are to be provided for filling the sludge compartments, and supplying the ballast tank forward with water. The consumption of coal will be 11 cwt. per hour, and the bunkers are adapted to hold at least 30 tons. The vessel will have no sails, but simply a mast for signalling purposes. The scantlings are to be in accordance with Board of Trade rules, and a certificate is to be obtained from the Board. The vessel will carry one boat.

The sludge will be transmitted from the precipitation works to the ship along iron pipes laid under the platform of a jetty and pier carried out into the river, the ship lying alongside the pier for the purpose. The cargo will occupy four large water-tight compartments, ranged two abreast, in the hull of the ship. The total length thus occupied will be 122 ft., each compartment being a little over 60 ft. long. The lowest part of the floor of these compartments is left about 9 in. above the light-trimmed water-line, and slopes down from two sides to the centre, where the outlet valves are placed. Of these valves there will be two, 18 in. in diameter, in each compartment. That portion of the ship which lies below the sludge compartments is simply so much unoccupied space, giving sufficient buoyancy to the vessel to bear up the sludge to the requisite height, so that the water-line shall always be at such a level in respect to the sludge as to permit of a free discharge. As the sludge escapes so the vessel will rise and the due relation of the levels be maintained. The exit of the sludge will follow the raising of the valve, effected by means of a rod leading up to the deck, where it will be worked by a screw arrangement, so as to lift or depress the valve to which the rod is attached. Passing through the valve the sludge will pass down a fixed cylinder into the sea. The hopper arrangement by which dredged materials are cast into the sea on some parts of the coast would be unsuitable in this case, the specific gravity of the sludge being little more than that of water. In the present plan the sludge will escape from the bottom of the ship several feet below the surface of the sea. From the time when the sewage enters the precipitating tanks at Barking or Crossness until the residuum is discharged into the German Ocean, the sludge will never be seen. Having reached a specified distance of at least ten miles beyond the Nore the ship will commence to discharge its refuse freight. If occasion required the whole could be allowed to escape in ten minutes. But a more deliberate mode of proceeding is to be expected, so as to prevent any palpable pollution of the sea. As the quantity of settled sludge produced at the two outfalls when the works are in full operation will average 3,000 tons per day, three ships will be required for the day's work. It is reckoned by Mr. Dibdin that this quantity of sludge will be spread over a course of some thirty miles. The organic matter in the discharged material will be about 150 tons, and it is calculated that the track of the ships will not be polluted to any greater extent than about 16 grains of organic matter per gallon of sea water. Oxidation, the feeding of fish, and the action of the tide, are expected so to deal with this organic matter as to prevent any nuisance accruing to the contiguous line of coast. As to the volume of the sludge it was stated by Sir John Coode in the recent discussion at the Institution of Civil Engineers, that the quantity of material dredged and sent to sea by the Tyne Commissioners during a period of years, averaged above four times as much per annum as the weight of sludge to be disposed of annually by the Metropolitan Board.

Two diagrams are appended, to illustrate our text. The longitudinal section shows a portion of the length of the ship, commencing at a point a little abaft the midship line, and proceeding forwards. Two water-tight bulkheads are shown, forming the two extremities of one of the forward sludge compartments, and also enclosing a portion of the cellular space below. The engines and boilers are at the rear of the tanks, with accommodation for the captain and officers further aft. The remainder of the hands on board are provided for in the forepart of the ship, ahead of the sludge compartments. The water ballast tank near the bow is required to bring the vessel's head down when the sludge has been discharged, thereby counterbalancing the weight of the engines aft. The midship section, which forms one of the diagrams, is taken through the sludge compartments, showing in section the longitudinal divisions of the cellular space beneath, and the position of one of the discharge valves.

## DISINFECTION IN THEORY AND PRACTICE.

### ASSOCIATION OF PUBLIC SANITARY INSPECTORS.

On Saturday last, at the monthly meeting of the Association of Public Sanitary Inspectors, held at the Westminster Town Hall, Dr. Alfred Carpenter, J.P., read an interesting paper entitled "Theory and Practice in Disinfection," in complying with a generally-expressed wish for an elaboration of some advice given by him to the members of the Association a few months ago. Commencing with an exhortation to the members to let reason and science guide them in their acts instead of the method, once nearly universal, of following empirical rules (which the Doctor euphemistically called "following instinct"), the lecturer inculcated the necessity of a systematic inspection, which ought to be regular in its irregularity. The various causes of infection were enumerated, the formidable list closing with the fouling of sources of water supply by the action of individuals or communities, and then the remedial measures to be adopted were discussed. So simple an action as pouring a solution of chloride of lime into a sewer should have a basis of reason in the mind of the inspector, and should not be done by mere rule and in blind obedience to stereotyped orders. Merely to get rid of nasty smells was not a sufficient reason for applying a disinfectant. The very nauseousness of a nasty smell generally prevented its doing harm. The object should be to check putrefaction,—to prevent the production of the gases which were causes of smell. The great difficulty of correct disinfection was to destroy the germs or eggs of bacteria as well as living bacteria. He had seen ova covered by carbolic acid and actually preserved by being so covered, with the result that when released from their dormant state by the peeling-off of the acid, they caused a fresh outbreak of disease. Germs such as those contained in the breath of a smallpox patient in the feverish stage would strike root if at once conveyed to the mucous membrane of a susceptible person, but they could not bear the action of light and air, nor the action of ozone, and they would lose their vitality if floated in air for the space of 100 yards. Hence the philosophy of isolation coupled with rapid ventilation, and the danger of the conveyance of smallpox cases through crowded districts. He recommended a particular kind of respirator to be used in such cases, the object to be attained being the retention of the germs in a disinfecting medium, which might be either antiseptic gauze soaked in a solution of carbolic acid, or a thin layer of cotton wool. All matter in which dormant spores might be resting hidden must be destroyed, but even then the process of disinfection would be incomplete unless the disease protoplasm were oxidised. The three necessary conditions of complete disinfection were, therefore,—first, ventilation, to secure complete oxidisation; second, destruction of the bacterial life; and third, destruction of the resting spore. Chloride of lime and carbolic acid having somehow failed, and ventilation having proved insufficient, many sanitarians resorted to burning the offending matters, but that appeared to the lecturer wicked waste. Nature provided a better security, viz., vegetation itself. He thought the benefit of lime-whiting arose less from the action of the lime upon organic matter in contact with it than from its absolutely removing the poison from the air of the chamber treated. Aërial disinfection by ventilation and sunlight, and by sulphurous acid fumes, was advantageous for the destruction of insect life, but alone such disinfectants were never enough for infected rooms. Scraping the walls (the scrapings being burnt in a furnace), washing the walls with lime-whiting, and the floors of infected rooms with corrosive sublimate, must follow. The latter was dangerous to use, and expensive, but rapid and thorough in its action. A solution of one part in 5,000 of water would in a quarter of an hour destroy either dormant germ or living thing,—a fact that had been proved by actual experiment. In declaring his conviction that steam heat was superior to every other means for disinfection, the lecturer said he was supported by the experiments of Dr. Koch, and he had no doubt that, in the future, disinfection by heat would take that form. To trust to carbolic acid for destroying the progress of infectious disease was to trust to a broken reed. Spores kept weeks in a five per cent. solution of carbolised oil, or preserved in alcohol, had been found capable of vigorous growth when afterwards transplanted to a favourable soil. Therefore, it was a fiction, and not a fact, to suppose that alcohol, or the use of spirituous liquors, was a remedy against impure water. While sewers were little better than elongated cesspools, and remained a disgrace to the constructing engineer,—*i.e.*, so long as they were not self-cleansing,—all excreta from infectious cases should be disinfected before entering the sewers, and for this purpose the application of green copperas (sulphate of iron) was the best. In the insufficient quantities which ordinarily were used, most of the advertised nostrums were moonshine for purposes of disinfection. Unless used in quantities fifty times more profuse than was usual, it was a wicked waste of material, and the same might be said of permanganate of soda and lime and iron, as recommended by the advisers of the Metropolitan Board of Works. Dr. Carpenter, in conclusion, said,—I trust that I have said enough to show the main basis upon which disinfection should be carried out are: Ventilation, aërial disinfection, or disinfection by chlorine or steam; lime-whiting, washing floors and furniture with solution of mercuric chloride (corrosive sublimate); steam heat, for clothing, furniture, &c.; sulphate of iron, or chloride of lime, in adequate quantities, for flushing; and the wonderful agency of

vegetable life. If these means are effectually applied, infective diseases will be completely banished from our midst, and any local authority which now allows of their continuance is doing defective work.

The lecturer was warmly applauded at the conclusion, and after a discussion, in which the chairman (Mr. Jerram) and other speakers took part, a cordial vote of thanks was tendered.

## PROFESSOR ROGER SMITH'S LECTURE ON "BRICKS AND BRICKWORK."

Sir,—The Professor quotes in his lecture at Carpenters' Hall, as reported p. 519 of last issue of the *Builder*, "A good brick was uniform in size; standard 9 in. by 4½ in. by 2½ in." I wish to point out that with bricks of this size or this proportion you cannot make decently fair work. Try with a common wall one brick thick, Flemish bond: the two stretchers side by side with a ⅜ in. joint between would measure 9⅜ in., whilst the headers being only 9 in. long, cannot reach the face of the work on one or both sides. Then, again, how is "Old English" bond to be worked, if two headers be equal to one stretcher? The header courses must have double the number of perpendicular joints that the stretcher courses require. The proper proportion of breadth to length is that the breadth should be half the length *less half the thickness of a joint.*

I prefer a ⅜-in. joint. The size to be aimed at is 8 13/16 in. by 4 5/16 in. by 2 11/16 in. It will be seen that in this size, or in any size of the same proportion, the bricks will bond perfectly with each other, either in "Flemish" or "Old English." Of course, in stocks, you cannot make bricks all exactly to sixteenths of an inch; but if you adopt this as a proper standard size and aim at making them as nearly that as possible, your bricks will average the proper dimensions. If you want a ½-in. joint, the size should be 8½ in. by 4 in. by 2½ in., or 9 in. by 4¼ in. by 2½ in.

Whilst writing of bricks, permit me to point out that many admirable facings from the Midlands and other distant parts are too thick to bond with London stocks. Again, others, especially white Suffolks, are too long in proportion to their breadth, being commonly 9¼ in. to 9⅜ in.; so that to keep the "perps" with other facings, they have to be shortened, at considerable expense.

In some cases the makers start with a size more or less right, but as the clay at different depths often slightly varies in quality, so that it shrinks more or less in burning, they neglect to follow this variation by the necessary alteration of their moulds, and so the size of brick varies from season to season. A. H.

## KITCHEN BOILER EXPLOSIONS, AND SAFETY VALVES.

Sir,—Mr. Wiston, on page 521, in mentioning his "precautions," appears to me to make a mistake; for, while he refers to "tanks" in his third precaution, he says, in his first, that the lowest draw-off tap is to be above the top of the "boiler." Now, if there is a *hot*-water tank on the hot system, the lowest draw-off should be joined above this tank, so that the said tank cannot be emptied by opening the draw-off taps.

By "tank" here is meant the hot-water receptacle often placed below the ceiling of the kitchen, and not the *cistern* which supplies the boiler with cold water.

Further, another precaution, often omitted, is to see that the hot blow-off pipe has a rise upwards in every part of its course, so that there may not be any obstacle to the easy rise of the steam and heat up the pipe. W. P. Buchan.

Sir,—Mr. Robert Wiston has fairly argued this subject. One little point remains to be noted, which I have always adopted with perfect success, viz.: to put the dead weight safety-valve on the return pipe,—say, just above the kitchen mantel,—and not on the flow pipe. The advantages are, the return pipe never corrodes, as does the flow, neither does the water freeze in this pipe so low as the kitchen mantel. When the water freezes in the pipes, it always occurs somewhere in the upper or coldest part of the house,—assuming the pipes are kept inside. Should the boiler be short of water through other causes, the pipes being free and open, the safety-valve will instantly show it. I have no interest in saying it, but I have always found J. Tylor & Sons' very effective. No good engineer ever thinks of putting a draw-off cock to a circulating boiler. Robt. Crane.

## CRANE'S WARMING AND VENTILATING COIL.

Sir,—Observing a notice in your last issue [p. 524] of Crane's warming and ventilating coil, we feel, in justice to ourselves, that it is only right to state that the coil in question is simply a copy of our hydro-caloric warming and ventilating coil, which has been manufactured by us for upwards of ten years. We enclose our printed particulars, with abbreviated extracts from notices received in the press about seven years ago, the first of which appeared in the *Builder*. J. Weeks & Co.

*King's-road, Chelsea*, April 4.

## PROVINCIAL NEWS.

*Bideford.*—The new Infirmary and Dispensary buildings here were opened on the 31st ult. They have been built by Messrs. W. E. Gent & Son, the contractors for the work, from the designs of Mr. G. Malam Wilson, Bideford. The whole of the hospital departments are on the ground floor. Each of the main wards will accommodate five beds. The premises have been built of local stone and brick, with Portland cement dressings and Aberthaw wrought cast. The contract price for the erection of the building was 1,120*l.*, but, including sundry extras and the purchase of the site, the total cost has been about 2,000*l.*

*Birmingham.*—On the 31st ult. the memorial stone of the new infirmary which is now in course of construction at the workhouse, Spring Hill, was laid. The building is designed on the pavilion principle, with a continuous corridor connecting the several pavilions with each other. The chief block is placed centrally, so that easy access is not only obtained there from all parts of the infirmary proper, but it is so planned that the laundry and chapel are accessible without any official or inmate getting out in the wet in inclement weather. The design is in harmony with the existing architecture. In the wards about 1,100 cubic feet of space will be provided for each patient, and 80 ft. of floor-space. The whole of the floors, corridors, and gangways will be of fireproof construction,—concrete carried on wrought-iron girders and joists,—and the floors of the wards will be laid with "oak-block" flooring, wrought and polished with beeswax, those on the ground-floor having a layer of bitumen underneath, so as to prevent the slightest damp arising. Mr. W. H. Ward is the architect, and Messrs. Bissett & Sons are the contractors.

*Cardiff.* — The Marquis of Bute has given eighty-eight acres of land at the foot of Penylan-hill as a new park for Roath.—— Levino's new Music-hall, in Queen-street, has been opened. It has been erected by Mr. Martin, contractor, Cardiff, at a cost of between 6,000*l.* and 7,000*l.*, and will seat 800 persons.

*Stockton.* — Stockton New Bridge, which crosses the Tees at a distance of about 20 ft. above the old bridge, was thrown open for traffic on Monday last. The old bridge has five arches, but the new one has only three,—viz., a centre opening of 110 ft. span and two side openings each of 85 ft. span. The crown of the centre arch is 18 ft. above zero of the tide gauge adopted by the Tees Commissioners, being the same height as the crown of the centre arch in the old bridge. The crowns of the side arches are 16 ft. above zero. The old bridge (says the *Leeds Mercury*) was built under the powers of an Act obtained in 1761, the twelfth Parliament of Great Britain, and the work was commenced about the year 1763 and was completed in 1771. The Bridge Board have entered into a contract with Mr. W. C. Atkinson, of Stockton, for the removal of the old bridge, and this will now be proceeded with. The causeway of the new bridge is 60 ft. wide between parapets, this width being divided into a roadway of 40 ft. and two footpaths each of 10 ft. The new structure is of iron and stone. Each arch consists of eight ribs of wrought iron, strongly braced together; upon these are laid transverse iron joists, which in their turn support a flooring of iron "buckled" plates, covering the whole surface of the causeway. Over this plated surface is spread a layer of concrete, forming the foundation for the metalling of the roadway and the York-stone flagging of the footpaths. Over the arches the parapets are of open cast-iron work; over the piers and abutments they consist of massive masonry of granite. All the visible portions of the piers, abutments, and approach walls are of Bramley Fall stone, the masonry of the piers and abutments is of dressed ashlar, and that of the retaining wall, on the Durham approach, is of rough ashlar. Cement concrete has been used in the hearting of both piers' abutments. The subaqueous part of each pier consists of five cast-iron cylinders, filled with hydraulic concrete. The abutment on the Yorkshire side is of masonry and concrete throughout. Here the river bank consists of a deep bed of tenacious clay, which rendered it possible to lay a foundation of concrete at a sufficient depth, and build up the masonry upon it, the water being excluded by means of a timber cofferdam surrounding the abutment. On the Durham side of the river the case was different; the clay does not extend to so great a depth as on the Yorkshire side, and below it is a bed of running sand, interspersed with boulder stones. Under these circumstances, and considering the depth attained by the channel in an adjacent part of the river, it was considered advisable to have recourse to the same system of foundation as that adopted for the piers, and accordingly cast-iron cylinders were employed. A contract for the execution of the works was taken by Messrs. Whitaker Brothers, of Horsforth, near Leeds, upon an open competition, and the entire work has been carried out by them. The approximate cost of the works, exclusive of Parliamentary and legal expenses and land, is 65,000*l.*, the estimated cost being 40,000*l.* The engineers of the work were Mr. Harrison Hayter, Vice-President of the Institution of Civil Engineers, and Mr. Charles Neale, M. Inst. C.E. Mr. Sivert Hjerleid, of South Stockton, has acted as clerk of the works.

## SCOTCH NEWS.

*Alloa.*—On the 2nd inst., the memorial stone of the new town-hall and library at Marshill, Alloa, the gift of Mr. John Thomas Paton of Norwood, was laid with Masonic honours by the Earl of Mar and Kellie. The building, which, as regards style is an adaptation of Gothic, will be 165 ft. in length; the breadth of the front portion facing Marshill is 87 ft., while the breadth of the main portion, which consists entirely of the hall, is 54 ft. The height of the front portion of the buildings from the ground line to the ridge will be 66 ft., while the height of the hall from ground line to ridge will be 40 ft. The centre block of the front portion will project fully 8 ft. beyond the general line of frontage. Springing from the hall floor, there is on either side a handsome staircase leading to galleries and rooms above. On the ground floor and on either side of the entrance there will be ladies' and gentlemen's lavatories, cloak-rooms, porter's room, &c. In this portion of the structure there are two side entrances to the hall. The hall will be fitted with side and end galleries, with orchestra and space for organ, having also a suite of retiring-rooms at the back of the platform, to which entrance may be had at the extreme north end of the building. On the first floor in the front block is situated reading-room, billiard-room, smoking-room, library, and reference library (Mr. Paton having agreed to give 1,000*l.* to form the nucleus of a library), billiard and reading rooms. On the second floor there will be provision for the Art School, which will include masters' room, elementary room, model-room, &c.; indeed, the whole of the second floor will be more or less devoted to the purposes of the Art School, and all these rooms will be reached by the main staircases, lighted from above by means of a glass roof. At the north end of the building, on the second floor (immediately to the back of the hall), rooms will be provided for the keeper. The building is from designs by Mr. Waterhouse, R.A., London, and will cost between 20,000*l.* and 30,000*l.* The contractors for the work are:—Mason work, Messrs. G. & R. Cousin; joiner work, Mr. Thomas Brown, Glasgow; plaster work, Mr. James Grant; slater work, Mr. R. Macfarlane; plumber work, Messrs. Philp & Hutchison; the clerk of works and local representative of the architect is Mr. Monteith.

*Kirkcaldy.*—New premises have just been erected in Kirkcaldy for the British Linen Company's Bank. The building is Italian in style, and consists of three stories. The ground-floor contains a spacious telling-room, also safe-room and agent's room. The writing chambers of Messrs. T. Dow & Sons are situated in an outbuilding in the rear of the bank. On the first and second floors of the building is the agent's dwelling-house. The bank has been built from plans prepared by Messrs. Kinnear & Peddie, architects, Edinburgh.

**Ancient Monuments.**—An order in Council was passed on the 7th of March last, declaring that the following ancient monuments should come under the provisions of the Ancient Monuments Protection Act, viz., Little Kit's Coty Houses in Aylesford, Kent; the chambered tumulus at Buckholt, Gloucestershire; the Druids' circle and tumulus on Eyam Moor, Derbyshire; the Pictish tower of Carloway; the Ruthwell Runic Cross; and St. Ninian's Cave in Wigtownshire.—*Athenæum.*

## ADIE'S COMBINED LEVEL & THEODOLITE

FIGURE 1

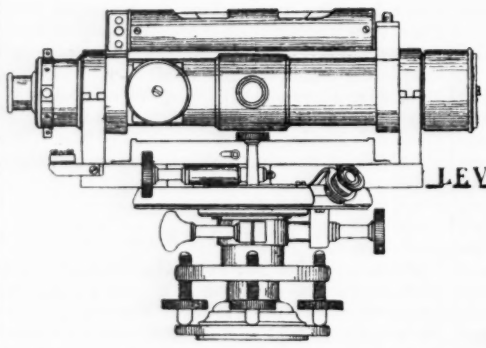


FIGURE 2

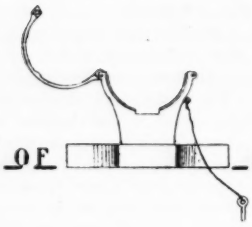


FIGURE 5

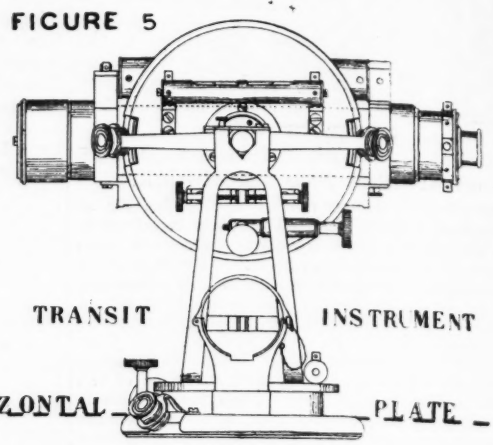



FIGURE 3

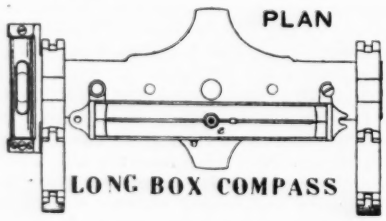



FIGURE 4

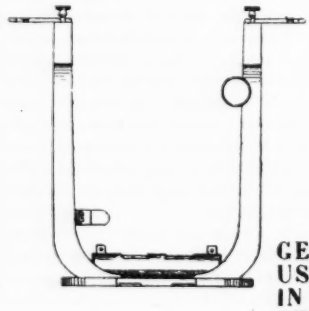
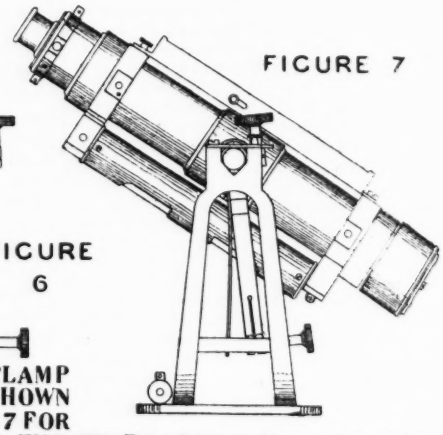


FIGURE 6

FIGURE 7



GERMAN CLAMP USED AS SHOWN IN FIGURE 7 FOR STEADYING THE TELESCOPE WHEN THE VERTICAL CIRCLE SHOWN IN FIGURE 5 IS DISPENSED WITH.

## CHURCH-BUILDING NEWS.

*Lincoln.*—On the 29th ult. the cap-stone of the spire of St. Swithin's Church, Lincoln, erected at the sole cost of Mr. Alfred Shuttleworth, as a memorial to his late father, was put in its place. The whole height of the spire from the ground level is 200 ft., just 100 ft. short of Louth spire (300 ft.), 74 ft. short of that of Grantham (274 ft. before the recent restoration; now something more), and 20 ft. short of the spire of Newark (220 ft.), but 17 ft. higher than the western spires of Lichfield Cathedral (183 ft.). The architect is Mr. James Fowler, of Louth. The stone was laid by Mr. Browning, the foreman under Mr. Baines, of Newark, the contractor for the work.

*Maldon.*—On the 29th ult. St. Mary's Church, Maldon, Essex, was reopened by the Bishop of St. Albans, after having been closed for restoration and enlargement for more than a year. The church, some parts of which date from Norman times, had suffered much by neglect and had been much pulled about during the last hundred years. The works which have been carried out include the construction of an arcade, with clearstory over, upon the site of the old south wall of the nave, and the building of a new south aisle capable of seating upwards of 100 additional persons. This will give accommodation for 390 persons against 254. At the east end of the new aisle an organ chapel and vestry have been constructed, an entirely new roof has been put upon the nave and also on the chancel, and the walls and windows of both nave and chancel have been substantially restored, and the whole fitted with new benches and paving, care being taken to preserve the old memorial slabs, and also the fragments of interest which were found during the progress of the works. The tower, which is surmounted by a fine old oak beacon, still remains to be restored. The whole of the works have been carried out by Mr. Gozzett, builder, of Woodham Walter, under the superintendence, as far as the nave and aisle are concerned, of Mr. Fred. Chancellor, architect, of Chelmsford, and as regards the chancel, under Mr. Ewan Christian, architect to the Ecclesiastical Commissioners. The total cost of the works as far as carried out amounts to £2,400.

## The Student's Column.

### FIELD WORK AND INSTRUMENTS.—XV.

*Surveying Instruments.*

IX.—THE THEODOLITE (*continued*).

THE permanent adjustments of the instrument executed by the makers fix the horizontal limb marked P truly level, when the spirit bubbles Q and T, or $T^1$, appear in the centre of their run, and the plane of the vertical arc or circle perpendicular to the horizontal limb. The line of collimation must also be at right angles to the trunnion axis of the telescope, and the trunnion axis of the telescope should be parallel to the horizontal limb. The long spirit level attached to the telescope should be parallel to the line of collimation (see figs. 34 to 44). To test the workmanship of the bearing surfaces connected with the vertical axis, set up the instrument as accurately level as possible, clamp the vernier plate to zero, and turn the limb of the instrument round the vertical axis until the telescope is over two opposite parallel plate screws U U, or Z 2. Tighten the collar R, and finally adjust the bubbles Q and T in the centre of their run by the parallel plate screws. Then unclamp the vernier plate, and turn it half round, so that the telescope, after traversing 180° upon the horizontal circle, is again over the same pair of parallel plate screws. The spirit levels Q and T will now be reversed in position with regard to the parallel plate screws, and if the bubble in each level is not in the centre of its run, the adjustment must be half effected by turning the capstan-headed screws of the bubble tubes respectively, which connect it to the instrument, and the remaining half by turning the elevating plate screws parallel to which it is placed. The operation must be repeated until each bubble remains accurately in the centre of its run in both positions of the telescope. Having accomplished this, perform the same operation with the vernier plate clamped to the horizontal limb by unclamping the collar R, and again reversing the telescope by traversing it round 180° over the elevating plate screws. If the bubbles do not still remain in the centre of their run, the instrument must be returned to the makers, as it shows that the two parts of the axis upon which the limb and the stage revolve have been inaccurately turned. When both the horizontal limb and the vernier plate are in adjustment,—that is, when the bubbles of the two spirit levels Q and T remain in the centre of their run during all positions of the revolution of either the vernier plate or of the whole instrument round the vertical axis, as above determined,—the line of collimation in the telescope should be horizontal when the bubble attached to the telescope is in the centre of its run, with the vertical arc or circle set to zero. The adjustment of this long bubble for reversion is effected in a similar manner to the adjustment of the shorter bubble T, to which it is parallel. The vertical arc is clamped to zero, and the telescope reversed as before.

However carefully the mechanism of the instrument may be executed, the telescope requires to be tested optically when fitted together. The line of collimation is examined and adjusted (1) for measuring horizontal angles, or angles in azimuth; (2) for measuring vertical angles.

Horizontal angles between vertical planes. (*a*). Having set up the instrument level, clamp the horizontal vernier plate to zero, and with the collar R unclamped, direct the telescope to a flagstaff, the weather vane on the spire of a church, or to some small well-defined object, at as great a distance from the instrument as the situation will permit. Then tighten the collar R, and by means of the tangent screw S, make the central intersection of the cross hairs bisect the object viewed. Having done this, release the clamp screw C of the upper plate, and traverse the upper plate from zero, so that a point in another well-defined distant object, which should stand about the same level is viewed, clamp the screw C, and by means of its tangent screw, D, make the cross hairs carefully bisect the second point of observation which has been selected. Then carefully record the horizontal angle traversed, taking the mean of the readings furnished by the verniers, so as to ensure accuracy in registering the sub-divisions. Next before unclamping either the screw C or R revolve the telescope vertically, in the case of a transit instrument, so that the telescope is turned over,

reversing the eyepiece and object glass end for end; then unclamp the collar R, and turn the whole body of the instrument round 180° in the direction of the last or second object viewed, leaving the vernier plate clamped as at the last reading. Clamp the collar R, and by means of the tangent screw S, make the cross hairs again bisect this object. Then release the vernier plate by unclamping the screw C, and turn the telescope horizontally round in the direction of the first object without unclamping the lower plate. Clamp the upper plate by the screw C, and carefully bisect the first object viewed by working the tangent screw, D. If the index of the vernier now points exactly to zero upon the lower plate, the line of collimation is correct, and the horizontal angle read between the two lines of sight can be accurately booked; but if the index of the vernier does not return to zero upon the primary scale of divisions, then half the error must be corrected by the horizontal capstan-headed collimation screws, and half by the tangent screw D. Care must be taken to move the opposite side screws in the diaphragm plate, both in the same direction and equal in amount, so that they should be adjusted gradually, in order to turn one as much as the other. The adjustment of the screws is effected by a spindle piece found in the box. (*b*). In a transit instrument, the adjustment of the line of collimation may be tested with the observation of a single station by first bisecting the object viewed after clamping both screws C and R, then revolve the telescope, so that if the bubble was first above the telescope, it is now below it, and then unclamping the screw C, revolve the vernier plate round 180°, reclamp the screw C, adjust the index by the tangent screw D, and proceed as before. (*c*.) Another method consists in sighting accurately the centre of a distant object; then without unclamping or in any way disturbing the position of the instrument revolve the telescope with great care and mark a position upon the other side of the instrument, which should be on a continuous line in plan. Then without revolving the telescope or releasing the upper plate, undo the lower clamp R and turn the body of the instrument half round, clamp the lower plate and by means of the tangent screw S make the cross-hairs bisect the first position viewed. Then, again, revolve the telescope vertically without unclamping the instrument, and if the cross hairs now bisect the second point observed on the line produced, the instrument is in adjustment for taking horizontal angles on or upon the same levels, but if not, note the error, and adjust the horizontal screws in the diaphragm plate so that the line of sight may strike halfway between the two points observed upon this side of the line. Repeat the test to prove the accuracy of the adjustment for the measurement of angles in azimuth. In the case of a non-transit instrument, such as a plain or an Everest theodolite, the vernier plate is first clamped to zero as before. The cross wires are set to bisect some well-defined distant object by means of the clamping and adjusting arrangements, R and S. The telescope is lifted gently out of its bearings, and replaced very carefully with the trunnion axis reversed. The screw C is then unclamped, and the vernier plate traversed through 180°. The screw C is again clamped, and the vernier index finally adjusted by the tangent screw, D. If the object viewed be still bisected, it proves that the line of collimation is perpendicular to the trunnion axis, but if not, then the error must be corrected as above explained. Having done this to ascertain if half the error of deviation has been correctly estimated, again traverse or reverse the trunnion axis, and if the line of collimation does not still bisect the object viewed, the operation must be repeated until, by successive approximations, the object is found to be accurately bisected in both positions of the trunnion axis.

**Penarth.**—The Presbyterian Chapel, which has been renovated at a cost of about 800*l*., was re-opened on Sunday last. The whole of the old building, with the exception of the end and side walls, was taken down, and extended at the front, thus providing sitting accommodation for about 400 worshippers. The work has been carried out from plans and under the superintendence of Mr. John H. Phillips, architect, Cardiff, and the style adopted is a free treatment of Romanesque.

## Books.

*Society in the Elizabethan Age.* By HUBERT HALL, of H.M. Record Office. London: Swan Sonnenschein & Co. 1886.

THE value of this contribution towards our knowledge of the social condition of England in the sixteenth century is considerable. In the hands of a Scott the materials which Mr. Hall has collected would have been woven into half a dozen historical romances, and, although the present editor makes no claim to possess any share of the great novelist's genius, the simple stories which the records themselves embody are replete with interest.

Mr. Hall's object is to make his readers acquainted with the principal phases of life in the Elizabethan age, and for this purpose he takes from each class in society one or more representatives, and tells us,—not what they ought to have done, or what they might have done, in their dealings with others, but,—what they actually did, and often what they actually said. As a specimen of the landlord class he selects a Wiltshire squire, William Darrell, of Littlecote, ill-known as "Wild" Darrell, but, in reality, more sinned against than sinning. Not that his life was a blameless one. He lived freely, gave generously, fought obstinately; but the ruin of his estates was as much due to the expenses of litigation as to personal extravagance. Like some others of his age, he sought to repair his broken fortunes through the favour of the Queen, and he therefore re-appears in Mr. Hall's pages under the character of a courtier. The details of his life in town, drawn from contemporary evidences, are curious, and the letters and accounts are especially valuable.

The other sections of society which Mr. Hall's extracts from the Records in his charge chiefly illustrate are the Civic, the Ecclesiastical, the Official, and the Mercantile. There is also a chapter entitled "The Tenant," which will be read at the present time with special interest. Mr. Hall asserts that the Elizabethan age was distinguished by "a violent land fever which raged in town and country." The Crown (enriched by the spoils of the Church) was a ready seller, and from every rank in the community there came eager buyers. But no sooner did these become landholders than, — like the ancient owners,—they endeavoured by every means to wrest from the sub-tenant his vested interest or fixity of tenure in the land. The great object of the copyholder was to secure a freehold in his tenure, and the great object of his lord was to get as much as he could out of his estates by rents, fines, and other payments. But on the whole, Mr. Hall thinks, "the position of the Elizabethan copyholder, villein, or even serf, as some people would delight to call him, was an independent and prosperous if not an honourable one."

We cannot speak too highly of the value which attaches to such side-lights as those Mr. Hall throws on history. We do not always agree with the conclusions at which he arrives, and his accuracy is not unquestionable. For instance, in the text (p. 106) he speaks of William Waryng as "of Pembroke," but in the appendix (p. 170) the Record describes him as of "Pembrugh or Pembruge, in the county of Hereford," *i.e.*, Pembridge, Herefordshire. This error (not the only one) is all the more remarkable as in the index Mr. Hall is a great deal too particular in giving "Brugys, Sir Egidius,"—an archaic form of the surname and a Latinised form of the Christian name of an old friend, Sir Giles Brydges. These, however, are trifles which do not much detract from the real merit of the book.

*Instantaneous Photography for Amateurs.* By C. W. Bath: Charles Seers. 1887.

THIS is a small pamphlet giving information and instruction in a plain and concise manner as to the methods of taking instantaneous photographs. It is of more use for those who would photograph landscape than architecture, of course; architectural photographers have little need of instantaneous photography, their subjects generally retaining the *status quo* sufficiently for any ordinary length of exposure.

**Newcastle-on-Tyne.**—Additions are about to be made to the National Schools at St. Anthony's, near Newcastle-on-Tyne. Mr. Arthur B. Plummer, of Newcastle, is the architect for the work.

## RECENT PATENTS.

### ABSTRACTS OF SPECIFICATIONS.

2,758, Ventilating Louvres. A. E. Bale.

The louvres constructed in accordance with this invention are chiefly for use in the jalousies common to tropical countries. They are controlled by cords and weights, which automatically check or close the louvres when the pressure of wind is brought against them. In other cases, water placed in a metal tube, and evaporated by the action of sun or temperature of the rooms, will actuate the louvres, which are in all cases held open by counterbalance weights.

5,076, Sliding Sashes. W. S. Lockhart.

This invention consists in an arrangement applicable to railway doors or windows, and allows the window-frame to be actuated from the side, instead of by the cord in the usual way. A weather board is an important feature of the invention. This is brought into play by a tumbler-like action at the side of the groove in which the sash slides.

4,962, Improved Draught and Dust Excluder. T. J. Porter.

This appliance consists of a composition cast or made into a suitable form, somewhat similar to the draught-tubing in general use, but with the important difference that it may be melted and pressed into the joint or crevice of window or door, and when cold it sets rigidly hard, until heat is again applied to remove it if necessary. The plastic material is covered with felt, which renders it warm and pleasant to the touch and sight, and prevents noise when the material is fixed to doors frequently opened and shut.

5,795, Ventilators. C. Gannaway.

The form of ventilator which is the subject of this invention is for the extraction of vitiated gases or foul air. It is simply an arrangement of double tubing through which air circulates or is caused to circulate by means of a fan or blower or other appliance. The tubes are placed vertically, and are made with suitable openings at intervals. On a current of air being forced down the central tube a strong current is set up in the outside tube, which extracts all foul air or bad gases.

5,820, White Lead. J. Warwick.

The improvements which are the subject of this invention are in the direction of performing the necessary operations with the least possible exposure of the workpeople to the injurious effects arising from the ordinary method of manufacture. This is attained by exposing different surfaces of lead very rapidly to the action of acids, and performing all this part of the work in closed vessels or with facilities for drawing off the fumes at such a distance as to be harmless.

6,292, Chimney Top or Ventilator. G. Sharp.

According to this invention two cones are fitted over the chimney-pot in such a manner as that they have free play to swing or oscillate within given limits. The effect of wind, therefore, is to blow one side of the cone nearer the chimney-pot, closing it, while the other side is opened and the egress of smoke or bad air accelerated.

### NEW APPLICATIONS FOR PATENTS.

*March* 25.—4,458, W. Barker, Brickmaking Die.—4,463, H. Allan, Soil-pipe Connexions for Water-closets, &c.—4,468, J. Morris, Chimney Top or Cowl.—4,479, R. Shaw, Ventilating Apparatus.

*March* 26.—4,521, T. Murphy, Bridle for Painters' Brushes, &c.—4,539, J. Evans, Axle Pulley for Window Sashes.—4,540, S. Taylor, Glazing Buildings, &c.—4,544, J. Williams, Metallic Window Sashes and Frames.

*March* 28.—4,593, W. Murray, Stone-dressing Machines.—4,594, E. Sturdy, Fastening Doors.—4,598, S. Elliott, Metal Water Bars for Windows and Doors opening inwards.—4,606, A. Boult, Paving.—4,611, N. Naudey, Cross-cut Saws.—4,615, R. Haddan, Brick or Block for Building Purposes.—4,622 and 4,623, J. Firth, Opening and Closing Window Casements, Fanlights, Doors, &c.

*March* 29.—4,642, Taylor & Davis, Mounting and Attaching Door-knobs to Spindles. — 4,683, B. Holmes, Sash or Door Latch.—4,701, H. Lake, Drain Traps.

*March* 30.—4,753, Burn & Macdonald, Pedestal, Combination, and Valve Closets.—4,766, W. Heath, Bending Lead Pipes or Tubes for Forming Elbows, Traps, &c.—4,772, J. Stawitz, Water Meters.—4,773, A. Boult, Door Checks.

*March* 31.—4,818, S. Taylor, Metal-covered Roofs.—5,835, T. Le Poidevin, Brickmaking Machine.

### PROVISIONAL SPECIFICATIONS ACCEPTED.

2,786, S. Wilding, Pressing Floor-boards together.—2,923, J. Kershaw, Machines for Cutting Wood Mouldings.—3,120, E. Taylor, Attaching Door and other Knobs to Spindles.—3,432, T. Gill, Water-closets.—3,740, W. Eddington, Mortar Mills.—3,912, J. Browne, Locks for Doors.—3,961, Young and Moss, Ventilating Apparatus.—2,217, W. Eaves, Window-sash Fastener.—2,821, W. Turner, Printing on Tiles, &c.—2,957, T. White, Decoration of Tiles, &c.—3,121, T. Cudlipp, Stoves, Ranges, Grates, &c.—3,397, T. Lister, Cramps, &c.—3,918, F. Sage, Show Cases, &c.

COMPLETE SPECIFICATIONS ACCEPTED.

*Open to Opposition for Two Months.*

6,238, W. Pringle, Apparatus for Cutting, Mitreing, and Cramping up Mitres of Mouldings.—7,100, J. Rollason, Wedge for Securing Doors and Windows.—7,114, Stoffert and Dykes, Construction of Girders.—7,282, J. Jefferies, Pneumatic Door Checks.—8,910, J. Law, Feeding Mechanism for Saw Frames.—9,824, A. Muir, Mitreing Machines.—15,965, G. Dobbs, Moulded Slag Paving Blocks.—844, C. Dixon, Apparatus for Drilling, Rhymering, Girders, &c.—1,908, Kristensen and Jensen, Casement Fastenings.

## RECENT SALES OF PROPERTY.

### ESTATE EXCHANGE REPORT.

MARCH 28.

By D. J. CHATTELL.

| | |
|---|---|
| Mottingham—The freehold residence, Highfield and grounds | £1,570 |

MARCH 29.

By BROAD & WILTSHIRE.

| | |
|---|---|
| Burton-crescent—No. 14, term 19 years, no ground-rent | 500 |
| Stratford—2, Amity-road, freehold | 360 |

By E. & F. SWAINE.

| | |
|---|---|
| Notting-hill—25, Ladbroke-grove, 51 years, ground-rent 10*l.* | 680 |

By R. BOYCE.

| | |
|---|---|
| Mile-end—19 and 21, Emmott-street, 22 years, ground-rent 4*l.* 13*s.* 4*d.* | 370 |

By DEBENHAM, TEWSON, & CO.

| | |
|---|---|
| Waltham Abbey, Sun-street—Freehold house and shop | 510 |
| Quaker's-lane—Three freehold cottages | 370 |
| Bedford Park, Marlborough-crescent—Ground-rents of 129*l.*, reversion in 87 years | 3,060 |
| Flanders-road—Ground-rents of 61*l.* 4*s.*, reversion in 87 years | 1,415 |
| Bath-road—Ground-rents of 34*l.*, reversion in 87 years | 800 |

MARCH 30.

By J. HIBBARD.

| | |
|---|---|
| Fulham—31 to 37 odd, Reporton-road, 91 years, ground-rent 22*l.* | 635 |
| Ball's Pond—21, Canterbury-road, 65 years, ground-rent 3*l.* 16*s.* | 285 |

By M. MILES.

| | |
|---|---|
| Clapham Park-road—The Oxford Arms, freehold | 2,530 |

By W. HALL.

| | |
|---|---|
| West Brompton—3 and 5, Seagrave-road, 45 years, ground-rent 8*l.* | 380 |
| East Finchley, Leicester-road—A plot of freehold land | 90 |

By COLLETT & COLLETT.

| | |
|---|---|
| St. Marylebone—9, 25, 26, 30, 31, 35, and 36, Nightingale-street, 35 years, ground-rent 62*l.* 2*s.* | 1,240 |

MARCH 31.

By HAMNETT & CO.

| | |
|---|---|
| Croydon—1 and 3, The Close, freehold | 3,000 |

By PRICKETT, VENABLES, & CO.

| | |
|---|---|
| Finchley—1 and 2, Albion-cottages, freehold | 545 |
| 1 and 2, Carlyle-cottages, freehold | 455 |

By MULLETT, BOOKER, & CO.

| | |
|---|---|
| Chelsea—3, Trafalgar-square, 22 years, ground-rent 6*l.* | 590 |
| Hyde Park—4, Gloucester-place, 50 years, ground-rent 12*l.* | 1,700 |
| 2, Gloucester-mews, 50 years, ground-rent 2*l.* | 300 |
| Portman-square—20, Montagu-street, and stabling, 36 years, ground-rent 30*l.* | 2,500 |

By T. B. WESTACOTT.

| | |
|---|---|
| Somers Town—11 and 12, Charles-street, 40 years, ground-rent 20*l.* | 590 |

By E. STIMSON.

| | |
|---|---|
| Clapham—3 to 14, White-square, freehold | 1,260 |
| Denmark-hill—10 and 14, Selborne-road, 76 years, ground-rent 11*l.* | 650 |
| Wandsworth-road—An improved rental of 160*l.* term 19 years | 1,110 |
| Rotherhithe—58, Plough-road, 61 years, ground-rent 3*l.* | 330 |
| 70, Plough-road, 63 years, ground-rent 3*l.* | 370 |
| 1 to 4, Canute-street, 63 years, ground-rent 9*l.* | 560 |
| Deptford—13, Shere-road, 58 years, ground-rent 2*l.* 1*s.* | 200 |

By H. G. BLISS & SONS.

| | |
|---|---|
| St. George's, E.—1, 2, and 3, Grace's-alley, freehold | 1,490 |
| 24, Cable-street, freehold | 620 |

By W. J. GARDNER.

| | |
|---|---|
| Finsbury Park—68, Blackstock-road, 84 years, ground-rent 6*l.* | 600 |

By NEWBON & HARDING.

| | |
|---|---|
| Hoxton—131, High-street, freehold | 1,010 |
| Hackney-road—Nos. 130 and 132, freehold | 1,630 |
| Bishopsgate-street—25 and 29, Brushfield-street, freehold | 1,655 |
| Clapton—151, 157, and 159, Clarence-road, freehold | 1,605 |
| 12 and 14, Downs-road, freehold | 1,100 |
| 20, Oakfield-road, 75 years, ground-rent 5*l.* 5*s.* | 295 |
| Kingsland-road—130 and 132, Tottenham-road, 34 years, ground-rent, 8*l.* | 505 |
| Stamford-hill—Nos. 23 and 25, term 55 years, ground-rent 18*l.* | 1,100 |
| Hertford—Freehold rent charge of 2*l.* a year | 35 |

## MEETINGS.

SATURDAY, APRIL 9.

*Edinburgh Architectural Association.*—Visit to Duntarvie Castle and Niddry Castle.

MONDAY, APRIL 11.

*Society of Antiquaries of Scotland (Edinburgh).*—8 p.m.

WEDNESDAY, APRIL 13.

*Civil and Mechanical Engineers' Society.*—Mr. R. E. Middleton on "The Forth Bridge." 7 p.m.

*York Architectural Association.*—Mr. S. H. Adams on "Sanitation." 7·45 p.m.

THURSDAY, APRIL 14.

*Edinburgh Architectural Association.*—Mr. J. Crabb Watt on "The Æsthetics of City Building." 8 p.m.

FRIDAY, APRIL 15.

*Institution of Civil Engineers (Students' Meeting).*—7·30 p.m.

*Parkes Museum (Lectures for Sanitary Inspectors).*—Dr. Alfred Hill, M.R.C.S., on "General History, Principles, and Methods of Hygiene." 8 p.m.

*Bradford Historical and Antiquarian Society.*—7·30 p.m.

## Miscellanea.

**Rothwell Market House.**—At a public meeting held at Rothwell, Northants, some time since, it was resolved that the most fitting way to commemorate the Jubilee of Her Majesty's accession would be by the completion of the interesting old Market-house for the purpose, primarily, of a reading-room. This building, according to the inscription, "was the work of Thomas Tresham, Knight. He erected it as a tribute to his sweet fatherland and county of Northampton, but chiefly to this town, his near neighbour. Nothing but the common weal did he seek; nothing but the perpetual honour of his friends. He who now puts an ill construction on this act is scarcely worthy of so great a benefit. A° Domini One Thousand Five Hundred and Sev—." Sir Thomas's good intentions towards Rothwell were unfortunately frustrated by the turbulence of the times, and the trials he underwent on account of his religious and political opinions, by which not only did he suffer in fortune and liberty, but his attention was engrossed to such a degree that of all the buildings he undertook (Rothwell Market-house, Rushton Hall, the Triangular Lodge, and Lyveden New Building) only the Triangular Lodge was completed in his lifetime. "Hard to say," says Thomas Fuller, "whether greater his delight or skill in building, though more forward in beginning, than fortunate in finishing his fabricks. Amongst which the Market-house at Rothwell, adorned with the Armes of the Gentry of the County, was highly commendable." The task which was abandoned in Queen Elizabeth's reign it is now proposed to complete in Queen Victoria's. The change of time necessitates a slight departure from the original intention of the founder. The lower story was to have been an open market-house, but there has been no market at Rothwell for many years. It is, therefore, proposed to enclose this story and to let it as offices. By this means a regular annual income will be obtained, which will serve not only to supply the reading-room with papers, but also to keep the building in repair, both of which objects, if left to annual subscriptions, are likely to languish. As to the upper story, it is not clear to what purpose it was intended to be put (it may have been intended for a school), but it is this room which is now to be used as the reading-room. The space in the high-pitched roof will also be utilised. In completing the building it is the intention of the promoters to have the external work done strictly in architectural harmony with the present fabric. The work will be entrusted to Messrs. Gotch & Saunders.

**Society of Engineers.**—At a meeting of this Society, held on Monday evening last, at the Westminster Town-hall, Professor Henry Robinson, President, in the chair, a paper was read on "The Shone Hydro-pneumatic Sewerage System," by Mr. Edwin Ault. The author introduced his subject by a general consideration of the conditions and difficulties of successfully dealing with sewage, and dwelt on the difficulty of reconciling proper sizes and gradients of sewers with economy in the depth of the sewers below the surface. He urged the advantages of separating the rainfall from the sewage proper, and showed how the Shone system enabled the engineer to overcome these difficulties. The automatic action of the ejector and the house-sewer flushing-tank was then described by the aid of diagrams. The author then gave particulars of three typical instances of the application of the system:—1. Eastbourne, where it has been added to the original system, and has been in successful operation for about six years. 2. The Houses of Parliament, where it has been applied recently. 3. Henley-on-Thames, where the whole sewerage of the town has been laid out for its adaptation. He mentioned, also, instances of its use for other and more specific purposes at Warrington and Southampton.

**The Architectural Association.**—The Members' *Soirée* took place on Friday evening, April 1st. This year there was no "play," the entertainment taking the form of a smoking concert. Mr. Mechlin Rogers recited very cleverly a selection from Dickens's "Christmas Carol"; Mr. A. Collard gave a skilful performance on the flute; some humorous musical sketches were given by Mr. Killmister; and songs by Messrs. Bulmer Booth and Guy Dawber.——The fifth Saturday afternoon visit of the Association was made on the 2nd inst. to Lambeth Palace. Mr. J. P. Seddon conducted the members over the buildings, the portions visited being the Lollards' Tower, and the chapel, entered from the Tower by a very fine doorway. The chapel was restored by Mr. Seddon, and decorated by Messrs. Clayton & Bell; the altar frontal, designed by Mr. Reeve, and some time ago illustrated in the *Builder*, is a very interesting piece of needlework. The dining-room has a very good open-timbered roof, and contains some interesting portraits of the archbishops. The Librarian, Mr. Kershaw, met the party in the Library, and showed some of the valuable and curious books and engravings contained in the Library; he stated that Mr. Christian attributed the roof to Sir Christopher Wren, but that that there was no actual record of his having been employed.——We have received the first number of "A. A. Notes," the magazine of the Association, edited by Mr. Herbert D. Appleton. Among the contents is a short article on "Sketching Tours," in which is shadowed forth a project for helping sketchers by information given by or through "consuls" and "vice-consuls," on the plan of the cyclists' touring clubs. Diocesan architects, county surveyors, and architects generally with good local knowledge, are requested to aid in this work.

**The "Hotel Victoria."**—The large and hitherto unoccupied hotel in Northumberland-avenue, originally designated the Northumberland-avenue, Hotel, designed by Messrs. Isaacs & Florence, architects, and executed by Mr. J. W. Hobbs, has just been completed, and is to be opened for business during the ensuing month. The structure was described in the *Builder* during the progress of its erection, and illustrations of it have appeared in recent volumes. It is now announced that the building has been purchased by a company, with a share capital of 200,000*l.*, and it is to be opened under the new title of the "Hotel Victoria." It is described as "the largest hotel in the world." Hotel nomenclature in the metropolis appears to be moving in this direction. The Army and Navy Hotel, in Victoria-street, Westminster, has been formed into a company, with a capital of 75,000*l.*, and will in future be known as the "Hotel Windsor."

**District Surveyors' Elections.**—At the meeting of the Metropolitan Board of Works on the 1st inst., after the amendment proposed by Mr. Williams (see *Builder*, p. 498, *ante*) had been negatived, it was resolved that, in future elections the number of candidates be reduced to six, at a meeting of the Board, by one ballot, at which each member may vote for six persons whose names are in the printed list; the result of such first ballot to be ascertained by scrutineers, consisting of two members of the Board, to be appointed for that purpose, together with the Clerk or his representative. That the six thus selected be balloted for, each member of the Board voting for one candidate only, until some one candidate has the votes of a majority of the members present, and that at each ballot the name of the candidate having the smallest number of votes, and also the names of all candidates who have less than 20 per cent. of the total number of votes, be struck off.

**New Suburban Stations on the Great Northern Railway.**—The continued increase of traffic in the northern suburbs of the metropolis intersected by the Great Northern Railway Company has led the company to rebuild and enlarge several of their stations in these localities, and within the last few months the stations at Stroud-green, Crouch-end, Highgate, and East-end (Finchley) have all for some time past been in course of rebuilding and enlargement, the booking and waiting room accommodation being much extended. With the exception of the East-end Station, now nearly finished, all the above-named stations are finished. It may be added that the new roof on the west side of King's-cross station, which has for some months been in progress, is now approaching completion.

**The Progress of the Panama Canal.**—Mr. Robert Nelson Boyd, M.I.C.E., who has just returned from an exploration of the Panama Canal, read a paper at the last meeting of the Civil and Mechanical Engineers' Society on the subject, describing the present condition of the cuttings and the canalisation of the Chagres river. He stated that only about one-fifth of the work has been done, and that its completion by 1889 is entirely out of the question. The remaining 120,000,000 of cubic mètres are being removed at the rate of 12,000,000 per annum, the maximum as yet attained, which was last year. At this rate the work will not be completed before 1897. Even on the showing of the resident engineers of the canal, who maintain that, counting the preliminary buildings, &c., one-third of the total work has been done, it will need ten years before the canal can be opened. But much of the present completed excavation has been in alluvial and other surface ground, and the elevated watersbed at Culebra of 300 ft. depth in basaltic rock will in itself take, according to the resident engineer's estimate, at least six years. This alone shows that there must in future be a reduced rather than an accelerated rate of excavation. Mr. Boyd's own estimate of time, even if all the necessary capital be forthcoming, is nearer twelve than ten years. The lowest estimate of money still required is admitted on the spot to be 2,200,000,000 of francs, in addition to the money already spent, which can only be surmised, as accounts are not forthcoming. Taking this unknown quantity at 1,000,000,000 of francs,—which is not excessive,—it appears that the total capital will amount to 3,200,000,000 of francs, or 128,000,000*l*. Of course it is possible that for less money and in a shorter time a ditch may be made with water flowing from the Pacific to the Atlantic, but not the canal as designed, 29 ft. 6 in. deep, and available for sea-going ships. Mr. Boyd concludes that the slavish following of the methods employed at Suez has been responsible for much of the failure at Panama, and that different methods must be adopted before the new conditions can be dealt with. These methods have now been partially adopted.—*Globe.*

**The Sunday Society.**—The twelfth annual meeting of this society was held on Monday last, at the Conduit-street Galleries, Mr. Robert Carter, F.S.S., in the chair. Mr. Mark H. Judge, Hon. Sec., read the annual report, which claimed for the past year that never before had there been so many and decisive expressions of public opinion in favour of the society's object. Reference was made to the re-election of Sir Henry E. Roscoe, F.R.S., as M P. for Manchester, and to the resolutions of which he had given notice in the House of Commons. Other matters touched upon in the report were the attempt to open the Colonial and Indian Exhibition on Sundays, the Sunday Art Exhibitions opened by the society, the Sunday opening of the National Art Treasures Exhibition at Folkestone, and the threats of prosecution in connexion therewith. "Another event," the report said, "of great importance to the Sunday opening movement in this year of the Queen's Jubilee is the announcement that the People's Palace at the East End of London is to be open on Sundays, and that her Majesty the Queen has consented to open the building, which is fast approaching completion." Considering the depression which has existed, and the complications in the political world, the society considered it had been well supported in its work, but appealed to the public to strengthen its hands during the ensuing year. The report was adopted, and on the motion of Mr. Mark H. Judge, seconded by Mr. Chas. H. Stanton, Sir George Macfarren, Principal of the Royal Academy of Music, was elected President of the Society for the current year.

**The Institution of Civil Engineers.**—A list of the members of this Institution, corrected to the 1st instant, shows that there are on the books 1,568 members, 2,275 associate members, 20 honorary members, 484 associates, and 949 students, together 5,296, being an increase of 196 in the past twelve months, or nearly 4 per cent. Mr. Edward Woods, President of the Institution, will give a *conversazione* on Wednesday, May 25th (Derby day). It will take place in the South Kensington Museum, by permission of the Lords of the Committee of Counci on Education.

**Strike in the Building Trade at Birmingham.**—The *Birmingham Gazette* says that in accordance with a resolution adopted at a mass meeting of operatives on Saturday evening deputations from the Amalgamated Society of Carpenters and Joiners waited upon some of the principal firms of employers in the building trade on Monday morning, and in all cases where a refusal was given to sign an agreement form agreeing to pay the present rate of wages and continue the working rules the men were withdrawn. Amongst the firms who refused to refused to sign the agreement were Messrs. John Barnsley & Sons, Messrs. Taylor (late Briggs), of Bradford-street, and Mr. John Bowen, of Balsall Heath. A number of employers acceded to the wishes of the deputations, and more are expected to follow. Messrs. Sapcote & Son's men turned out on Saturday. So far about 500 men have been withdrawn, out of some 5,000 in all who are affected. The painters, who have received a notice from the Painters' Association similar to that given by the master builders, have, at a meeting of the delegates, decided to abide by the action of the general body. The reduction being pressed for by the master builders means to the men a loss in earnings of 4s. 6d. per week. There is a great objection to this, as the wages were reduced 3s. 4½d. in 1880, though of this 1s. 1½d. has since been given back. Efforts are being made to settle the dispute by arbitration.

**The Registration of Plumbers.**—Last week's number of the *Builder* contained an advertisement, occupying an entire page, giving the names of London and country plumbers, bath masters and journeymen, to whom the Worshipful Company of Plumbers had granted their certificate of registration. We now learn that on Saturday last, the 2nd inst., eighty-two plumbers were examined at the City and Guilds Technical College, Finsbury, by the examiners appointed by the Company. There were twenty-eight master plumbers and fifty-four journeymen from various districts of London, and from Folkestone, Brighton, Eastbourne, Rochdale, Derby, Cardiff, Swansea, and Leeds. The examinations included practical tests in pipe-bending, jointing, gutter work, &c., and the applicants were afterwards examined in various subjects connected with materials used in plumbing, house-fitting, and sanitation. Among the examiners present were Mr. George Shaw, C.C. (chairman), Messrs. Charles Hudson, C. T. Millis, W. Titmas, W. H. Webb, J. C. Ashdown, R. J. Lyne, H. B. Lobb, L. F. Gilbert, and R. A. Nurse.

**The Forth Bridge.**—On Saturday last the members of the East of Scotland Engineering Association, headed by the Vice-President, Mr. Bennet, and the Secretary, Mr. F. H. Lightbody, paid their annual visit to the Forth Bridge. The piers on both sides of the river,—which have been built by gradually raising the girders which they support a few feet at a time,—are now nearly completed, and the level at which the trains will run can now be seen. The three sets of cantilevers, which spring from the caissons in the centre of the Forth, and form the main feature in the design of the bridge, are also well forward. Those on the north and south sides have reached to within a few feet of their entire height of 350 ft. above the water, and the arms extending to the girders on either side are being proceeded with. The middle cantilevers at Inchgarvie are about halfway up.

**Terry's Theatre.**—The new theatre for Mr. Edward Terry, on the site of the Occidental Tavern, Savoy-buildings, Strand, has been commenced. Messrs. Holliday & Greenwood have obtained the contract at a reduced tender of 13,857*l*. Messrs. Doulton and Messrs. Wilcock & Co. have orders for executing the terra-cotta and glazed tile work. Messrs. Battiscombe & Harris have been entrusted with the carton-pierre. Messrs. Matthew T. Shaw & Co. have the ironwork in hand. The hydrants and fire appliances have been put into the hands of Messrs. Rose; the whole of this portion of the work has been arranged under the special supervision of Mr. George Harrison, A.M.I.C.E. Sir Seymour Blane's fire-resisting paint will be used for all exposed woodwork. Messrs. Wilkes & Co. have received the orders for the Eureka concrete. The whole of the works are being carried out under the superintendence of Mr. Walter Emden, architect. Mr. Egan is the clerk of the works.

**Dumfries and Galloway Antiquarian Society.**—At the meeting of this Society on the 1st inst.,—Dr. Grierson, of Thornhill, presiding,—the secretary (Mr. J. Wilson) read a communication regarding a cup-shaped urn recently found at Greystone, in the immediate vicinity of Dumfries. It had been found when digging out an old landmark, known as "The Grey Stone," believed to have been one of a Druidical circle, and which had been buried for a long time. The cup is of red clay, burned, unglazed, 2½ in. high, 1½ in. in diameter at the base, 3 in. at its widest part, and 2½ inches at the mouth, and is ornamented with three rings and a row of dots. No trace of a larger urn was discovered, although this was obviously of the type occasionally found accompanying larger cinerary urns belonging to the bronze age. Dr. Anderson, Regius Keeper of the National Museum of Antiquities in Edinburgh, who had been communicated with on the subject, recommended further careful examination of the spot, being of opinion that it might possibly be found to have been a small cemetery. Mr. Coles, of the Hermitage, Tongland, read a long and copiously illustrated paper on recent discoveries of cup and ring markings on stones in Kirkcudbrightshire. He stated that they had in one small district in the parish of Kirkcudbright six out of the seven types of these ancient markings described by Sir J. Y. Simpson (four of them being found on one stone at Dunrod), and also several new ones. The only type not found in the district was the spiral. On a stone on the farm of High Banks could be traced an elaborate design, and composed of central cups and rings of cups or cupped circles. The lecturer was not aware that anything approaching this, either in elementary form or in symmetry of arrangement, had ever before come to light. Oblongs and segments of circles were also discovered, and an oblong hollow surmounted by a four-square groove; and a cast was exhibited of an arrangement of cups and lines, being apparently a primitive attempt to represent a tree. The recorded localities in the Stewartry in which such markings have been found now number nearly thirty. Mr. Coles shortly noticed the various theories advanced to account for these archaic sculptures, which are assigned to the Stone Age, and inclined to the belief that they are of symbolic character.—*Scotsman.*

**Art at the Merchant Venturers' School, Bristol.**—Some eighteen months ago the managers of the Merchant Venturers' school opened a department for the teaching of art. Mr. John Fisher was selected as head of the department, the object of which is to teach art of a practical character,—applied art,—and to give instruction, to quote the words of the prospectus relating to the class, "calculated to meet the requirements of architects, wood and stone carvers, decorators in plaster, art workmen in pottery and terra-cotta, designers and modellers in cast metal, chasers and engravers in silver and bronze, artificers in ornamental smiths' work, and those engaged in surface decoration of every kind, and of both sexes, in the hope that it may prepare them for remunerative employment in applying art to industrial pursuits." Modelling of the figure is also taught, and classes are held in the day and in the evening. The results hitherto of this practically new art feature in Bristol are (according to the *Bristol Times and Mirror*) most encouraging. To begin with, Mr. Fisher had half a dozen pupils; now he has nearly seventy. On the 1st inst. the work of the students was arranged in one of the class-rooms for the inspection of a few friends of the students, previously to its despatch to South Kensington, where it will be placed in the national competition.

**York City Surveyorship.**—At the meeting of the York Town Council on Monday evening last, the Streets and Buildings Committee recommended the Council to accept the resignation of Mr. Styan as City Surveyor, and to appoint him as Consulting Surveyor to the Corporation, at a salary of 100*l*. per annum for the remainder of his life. The Council unanimously adopted this recommendation, and discussed at some length the question as to whether the salary of Mr. Styan's successor should be 300*l*. or 400*l*. a year. Ultimately, after several resolutions had been put and lost, it was resolved that the Committee should be instructed to advertise for a City Surveyor, at a salary not exceeding 400*l*.

## PRICES CURRENT OF MATERIALS.

| TIMBER. | £. s. d. | £. s. d. |
|---|---|---|
| Greenheart, B.G. .....ton | 6 10 0 | 7 10 0 |
| Teak, E.I. .....load | 9 0 0 | 14 0 0 |
| Sequois, U.S. .....foot cube | 0 2 3 | 0 3 0 |
| Ash, Canada .....load | 3 0 0 | 4 10 0 |
| Birch ,, ..... | 2 0 0 | 3 10 0 |
| Elm ,, ..... | 3 10 0 | 4 10 0 |
| Fir, Dantsic, &c. ..... | 1 10 0 | 4 0 0 |
| Oak ,, ..... | 2 10 0 | 4 10 0 |
| Canada ..... | 3 0 0 | 6 0 0 |
| Pine, Canada red .....fathom | 2 0 0 | 3 10 0 |
| ,, yellow ..... | 2 5 0 | 4 0 0 |
| Lath, Dantsic .....fathom | 3 0 0 | 5 0 0 |
| St. Petersburg ..... | 4 0 0 | 5 10 0 |
| Wainscot, Riga .....log | 2 15 0 | 4 0 0 |
| ,, Odessa, crown..... | 2 15 0 | 3 0 0 |
| Deals, Finland, 2nd and 1st...std.100 | 7 0 0 | 8 0 0 |
| ,, 4th and 3rd ..... | 5 10 0 | 6 10 0 |
| Riga ..... | 5 10 0 | 7 0 0 |
| St. Petersburg, 1st yellow ..... | 8 10 0 | 14 0 0 |
| ,, 2nd ,, ..... | 7 0 0 | 8 0 0 |
| ,, white ..... | 6 0 0 | 9 0 0 |
| Swedish ..... | 6 0 0 | 15 0 0 |
| White Sea..... | 7 0 0 | 16 10 0 |
| Canada, Pine, 1st ..... | 17 0 0 | 25 0 0 |
| ,, ,, 2nd..... | 11 0 0 | 16 0 0 |
| ,, ,, 3rd, &c..... | 6 0 0 | 9 0 0 |
| ,, Spruce, 1st ..... | 8 0 0 | 10 0 0 |
| ,, ,, 3rd and 2nd ..... | 5 0 0 | 7 0 0 |
| New Brunswick, &c. ..... | 5 0 0 | 7 0 0 |
| Battens, all kinds ..... | 4 0 0 | 11 0 0 |
| Flooring Boards, sq. 1 in., prepared, First ..... | 0 8 0 | 0 11 6 |
| Second ..... | 0 6 6 | 0 7 6 |
| Other qualities ..... | 0 5 0 | 0 6 0 |
| Cedar, Cuba .....foot | 0 0 3 | 0 0 3½ |
| Honduras, &c. ..... | 0 0 2½ | 0 0 3½ |
| Australian ..... | 0 0 2 | 0 0 3 |
| Mahogany, Cuba ..... | 0 0 4 | 0 0 7 |
| St. Domingo, cargo average ..... | 0 0 4 | 0 0 6 |
| Mahogany, Mexican, cargo av..... | 0 0 3½ | 0 0 4½ |
| Tobasco ,, ..... | 0 0 4 | 0 0 6 |
| Honduras ,, ..... | 0 0 4 | 0 0 6 |
| Maple, Bird's-eye ..... ..... | 0 0 6 | 0 0 8 |
| Rose, Rio .....ton | 7 0 0 | 10 0 0 |
| Bahia..... | 6 0 0 | 10 0 0 |

| TIMBER (*continued*). | £. s. d. | £. s. d. |
|---|---|---|
| Box, Turkey .....ton | 5 0 0 | 15 0 0 |
| Satin, St. Domingo .....foot | 0 0 5 | 0 0 10 |
| Porto Rico ..... | 0 0 6 | 0 0 10 |
| Walnut, Italian ..... | 0 0 4 | 0 0 5 |
| **METALS.** | | |
| IRON—Bar, Welsh, in London...ton | 4 7 6 | 4 15 0 |
| ,, ,, in Wales ..... | 4 2 6 | 4 7 6 |
| ,, Staffordshire, London ..... | 5 10 0 | 6 0 0 |
| Sheets, single, in London ..... | 6 15 0 | 8 10 0 |
| Hoops ,, ..... | 6 0 0 | 7 0 0 |
| Nail-rods ,, ..... | 5 15 0 | 6 10 0 |
| COPPER— | | |
| British, cake and ingot .....ton | 43 0 0 | 43 10 0 |
| Best selected ..... | 44 0 0 | 44 10 0 |
| Sheets, strong..... | 50 10 0 | 51 0 0 |
| Chili, bars ..... | 39 10 0 | 40 0 0 |
| YELLOW METAL .....lb. | 0 0 4 1/16 | 0 0 4½ |
| LEAD— | | |
| Pig, Spanish .....ton | 12 10 0 | 0 0 0 |
| English, common brands..... | 12 15 0 | 0 0 0 |
| Sheet, English ..... | 13 15 0 | 14 0 0 |
| SPELTER— | | |
| Silesian, special .....ton | 14 2 6 | 0 0 0 |
| Ordinary brands..... | 14 0 0 | 0 0 0 |
| TIN— | | |
| Straits.....ton | 102 5 0 | 102 15 0 |
| Australian ..... | 102 10 0 | 0 0 0 |
| English ingots ..... | 105 10 0 | 0 0 0 |
| **OILS.** | | |
| Linseed .....ton | 19 15 0 | 20 0 0 |
| Cocoanut, Cochin ..... | 33 0 0 | 36 0 0 |
| Ceylon ..... | 25 10 0 | 0 0 0 |
| Palm, Lagos ..... | 22 0 0 | 0 0 0 |
| Rapeseed, English pale ..... | 22 5 0 | 0 0 0 |
| ,, brown ..... | 20 12 6 | 20 15 0 |
| Cottonseed, refined ..... | 18 0 0 | 19 10 0 |
| Tallow and Oleine..... | 25 0 0 | 45 0 0 |
| Lubricating, U.S..... | 5 0 0 | 6 10 0 |
| ,, refined..... | 5 0 0 | 12 0 0 |
| TURPENTINE— | | |
| American, in casks .....cwt. | 1 8 0 | 0 0 0 |
| TAR— | | |
| Stockholm .....barrel | 0 15 0 | 0 15 6 |
| Archangel ..... | 0 12 6 | 0 0 0 |

## COMPETITIONS, CONTRACTS, & PUBLIC APPOINTMENTS.

*Epitome of Advertisements in this Number.*

### COMPETITIONS.

| Nature of Work. | By whom required. | Premium. | Designs to be delivered. | Page. |
|---|---|---|---|---|
| Jubilee Memorial, Chichester ..... | The Committee..... | 5*l.* ..... | April 18th | ii. |

### CONTRACTS.

| Nature of Work, or Materials. | By whom required. | Architect, Surveyor, or Engineer. | Tenders to be delivered. | Page. |
|---|---|---|---|---|
| Making-up and Paving Roads ..... | Wandsworth Bd. of Wks | *Official* ..... | April 12th | ii. |
| Erection of Boundary Walls ..... | Woolwich Union ..... | J. O. Cook ..... | April 14th | xvi. |
| Infectious Diseases Hospital ..... | Liverpool Corporation | *Official* ..... | April 18th | ii. |
| Wrought-Iron Fencing and Cast-Iron Pipes... | Hornsey Local Board... | T. De Courcy Meade ... | do. | xvi. |
| Erection of Public Baths..... | Brighton Town Council | P. C. Lockwood ..... | April 19th | xvi. |
| Roads and Sewers, &c..... | Southborough Local Bd. ..... | W. Harmer ..... | do. | ii. |
| Alterations to 32, Finsbury Pavement..... | | C. P. Edwards ..... | April 20th | ii. |
| Railway Stores ..... | L. B. & S. C. Ry. Co.... | *Official* ..... | April 21st | ii. |
| Polesworth Waterworks ..... | Atherstone R. S. A..... | B. Latham ..... | April 25th | ii. |
| Construction of Aqueduct ..... | Manchester Corporation | G. H. Hill ..... | April 30th | ii. |
| Rebuilding Parish Church, Sutton Maddock | The Committee..... | Nicholson & Son ..... | do. | xvi. |
| Public Baths, St. John's, Hampstead ..... | The Commissioners..... | Spalding & Auld ..... | May 2nd | xvi. |
| Alterations, Additions, &c., to Board Schools | Schl. Board for London | *Official* ..... | Not stated... | ii. |
| Movable Wood Partitions for School Rooms... | do. | do. | do. | ii. |

### PUBLIC APPOINTMENTS.

| Nature of Appointment. | By whom Advertised. | Salary. | Applications to be in. | Page. |
|---|---|---|---|---|
| Surveyor ..... | Bishop's Stortford L. B. | 200*l.* ..... | April 22nd | xiv. |

## TENDERS.

BICKLEY.—For building additions to Logs Hill, Bickley, for Mr. A. Machin. Mr. H. Appleton, architect:—

| | |
|---|---|
| Arnaud & Son (accepted) ..... | £334 0 0 |

[No competition.]

BROADSTAIRS.—For the erection and completion of a dwelling-house at Cosy Nook, Broadstairs, for Mr. Blackwell, jun. Mr. E. L. Elgar, architect:—

| | |
|---|---|
| C. Home, Ramsgate ..... | £955 0 0 |
| C. Collins, Ramsgate ..... | 840 0 0 |
| J. H. Forwalk, Ramsgate ..... | 752 2 0 |
| Newby Bros., Ramsgate ..... | 665 16 0 |
| H. Miller, Ramsgate ..... | 620 0 0 |
| J. T. May, Broadstairs ..... | 602 0 0 |
| W. W. Martin, Ramsgate..... | 586 0 0 |
| E. Starke, Broadstairs ..... | 560 0 0 |
| G. M. Dawson, Broadstairs (accepted) | 507 0 0 |

BROMLEY (Kent).—For rebuilding Napier Laundry and dwelling-house, Napier-road, Bromley Common, for Messrs. Emery & Co.:—

| | |
|---|---|
| Arnaud & Son (accepted) ..... | £1,037 0 0 |

[No competition.]

BROMLEY (Kent).—For building additions to Westfield, London-road, Bromley, for the Misses Clarke. Mr. W. R. Mallett, architect:—

| | |
|---|---|
| Arnaud & Son (accepted)..... | £681 0 0 |

[No competition.]

DOVER.—For additions to the Convalescent Home for Working Men, St. Margaret's Bay, near Dover. Mr. George Simmonds, architect, St. Margaret's, Twickenham:—

| | |
|---|---|
| J. J. Wise, Deal ..... | £296 0 0 |
| C. Kent, Euston-road, London ..... | 283 10 0 |
| H. Stiff, Dover..... | 277 0 0 |
| Johnson & Co., Dover ..... | 243 0 0 |
| H. Richardson, Dover ..... | 240 0 0 |
| W. J. Adcock, Dover..... | 235 0 0 |
| G. H. Denne & Son, Deal ..... | 228 0 0 |
| W. J. Wiles, Dover ..... | 218 0 0 |
| Geo. Lane, Dover ..... | 218 0 0 |
| Wm. King, Dover ..... | 210 0 0 |
| W. & T. Dennie, Upper Walmer ..... | 209 0 0 |
| W. G. Claysen, St. Margaret's, near Dover ..... | 182 0 0 |
| Austin & Lewis, Dover (accepted) ... | 175 0 0 |

FULHAM.—For the erection of the new Fulham Townhall and offices, for the Vestry. Mr. Geo. Edwards, architect, Queen Victoria-street. Quantities by Messrs. Widnell & Trellope, Parliament-street:—

| | |
|---|---|
| Hart ..... | £25,875 0 0 |
| Ashford ..... | 25,696 0 0 |
| Priestley ..... | 24,890 0 0 |
| Stephens & Bastow ..... | 23,996 0 0 |
| Flew ..... | 23,900 0 0 |
| Martin, Wells, & Co..... | 23,850 0 0 |
| Kirk & Randall ..... | 23,832 0 0 |
| Higgs..... | 23,750 0 0 |
| Aviss ..... | 23,660 0 0 |
| Ward & Lamble ..... | 23,454 0 0 |
| Lucas ..... | 23,280 0 0 |
| Messum..... | 23,273 0 0 |
| Turtle ..... | 23,047 0 0 |
| Higgs & Hill ..... | 22,880 0 0 |
| Oldrey ..... | 22,834 0 0 |
| Brass ..... | 22,777 0 0 |
| Parnell & Son..... | 22,689 0 0 |
| Stevenson..... | 22,653 0 0 |
| Green..... | 22,644 0 0 |
| Gould..... | 22,580 0 0 |
| Steer ..... | 22,500 0 0 |
| Smith..... | 22,377 0 0 |
| Howell & Son ..... | 22,175 0 0 |
| Prestige & Co..... | 22,113 0 0 |
| Nightingale ..... | 21,980 0 0 |
| Stimpson & Co. ..... | 21,870 0 0 |
| Balaam ..... | 21,686 0 0 |
| Braid..... | 21,600 0 0 |
| Chappell ..... | 20,928 0 0 |
| Scrivener ..... | 20,250 0 0 |
| Wall ..... | 19,938 0 0 |
| Treasure & Son, Shrewsbury* ..... | 18,995 13 4 |

* Accepted.

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